PAPER TRADE JOURNAL

APR 9 1938

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Established 1886

Preparation

"I find the great thing in this life is not alone where we stand but also in what direction we are moving."

OLIVER WENDELL HOLMES.

In a business history of over fifty years, it is only natural to have learned much of the Pulp and Paper Industry. Perhaps the knowledge and the experience thus acquired can assist you in meeting a current problem or to help you plan for the coming year.

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—INCORPORATED—

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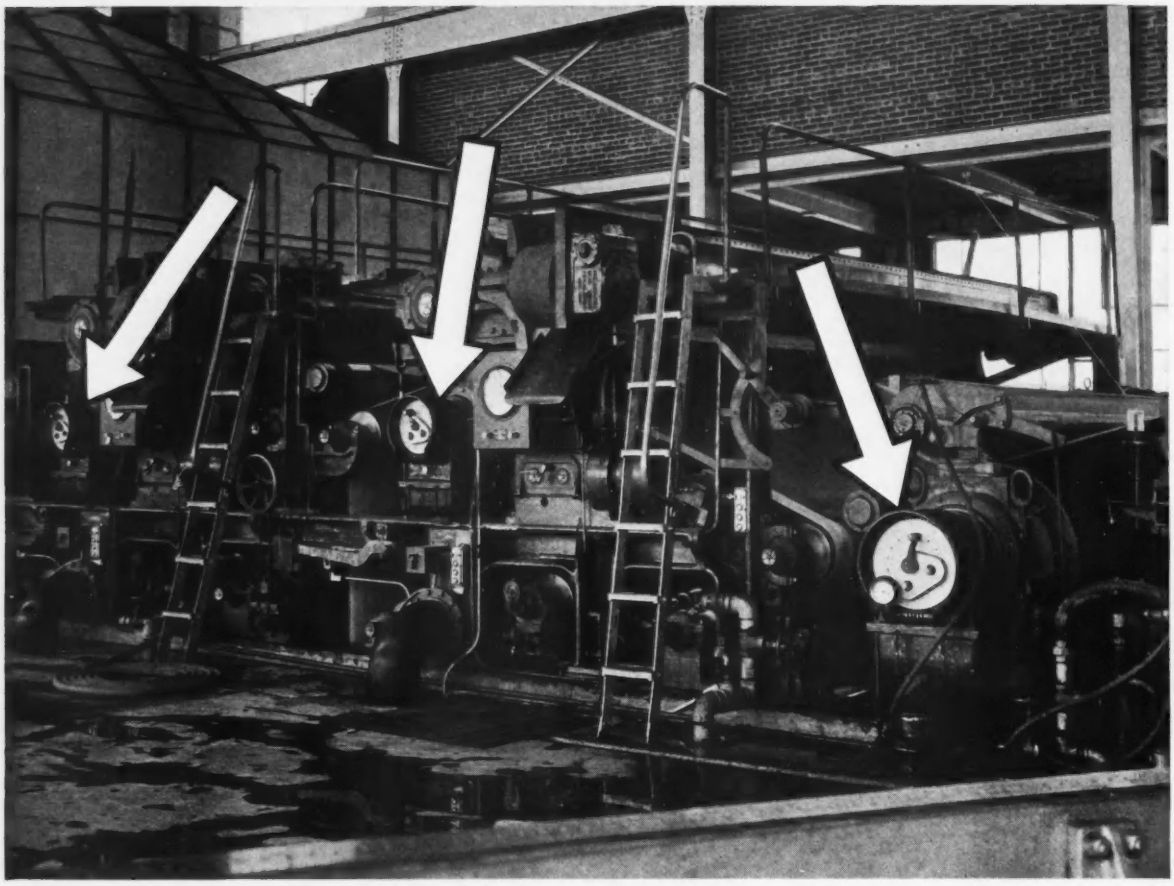
MARCH 24 1938

Vol. CVI No. 12

DOWNINGTOWN



Chesapeake-Camp Corp.

Franklin, Virginia

SUCTION COUCH ROLL
•
SUCTION FIRST PRESS
•
SUCTION SECOND PRESS

Three 212" Downingtown Suction Rolls were chosen for this new, modern kraft fourdrinier. The 36" Suction Couch is Cantilever, of course, and the two 34" Suction Presses are Rubber Covered with holes drilled in the Downingtown Patented Spiral Arrangement. Send for our Catalogs Nos. 117-118, which completely describe the construction and advantages of Downingtown Suction Couch, Suction Press, Suction Felt and Suction Drum Press Rolls. The Downingtown Mfg. Co., Downingtown, Pa.

OLDEST MANUFACTURERS OF MODERN SUCTION ROLLS

Entered as second class matter at the Post Office at East Stroudsburg, Pa., under the Act of Congress of March 3, 1879. Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., East Stroudsburg, Pa. Executive and Editorial office: 15 W. 47th St., New York, N. Y. Domestic subscription U. S. and possessions, $4.00 per year.

PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

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The PAPER TRADE JOURNAL is indexed in Industrial Arts Index

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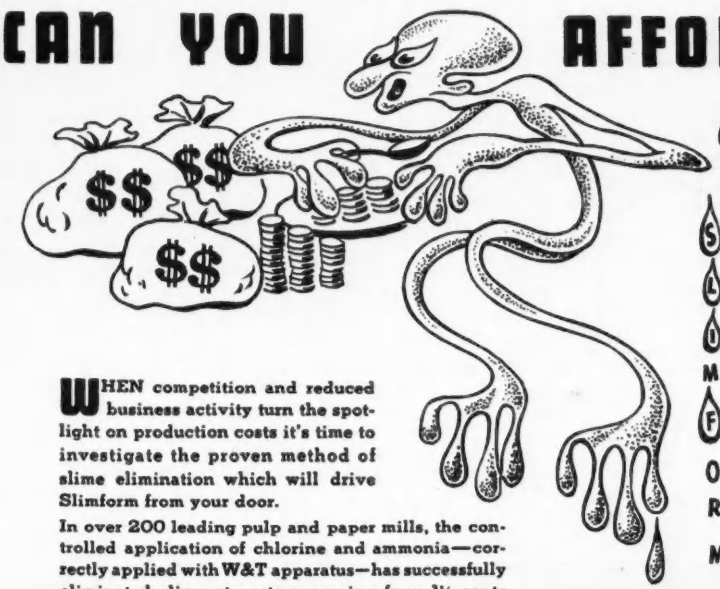
CAN YOU AFFORD TO FEED Slimform?



WHEN competition and reduced business activity turn the spotlight on production costs it's time to investigate the proven method of slime elimination which will drive Slimform from your door.

In over 200 leading pulp and paper mills, the controlled application of chlorine and ammonia—correctly applied with W&T apparatus—has successfully eliminated slime at costs averaging from 1½ cents to 6 cents per ton of product.

In your mill too, Slimform can be banished—slime losses turned into profits.

The story is told in Research Publication #327 "Slime in Paper Mills—Its Origin and Prevention." A request on your letterhead brings you a copy without obligation.

S tock losses—bacterial decomposition and reworking of stock

L owered Quality—slime spots—pin hole—objectionable odors

I ncreased Costs—in water, heat, labor, chemicals

M aintenance Troubles—blinded wires—plugged felts

F requent Clean-ups—slime breaks, poor sheet formation

O bstruction of Lines—stock and white water lines

R ecirculation Difficulties—slime growths in recirculated systems

M echanical Strain on felts and wires—shortened useful felt and wire life

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Manufacturers of Chlorine and Ammonia Control Apparatus

NEWARK, NEW JERSEY · Branches in Principal Cities

OTHER W&T CONTROL SERVICES:

Automatic pH Control · Dry Chemical Feeders · Bleach Plant Equipment

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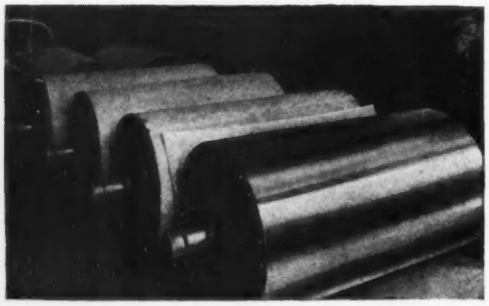
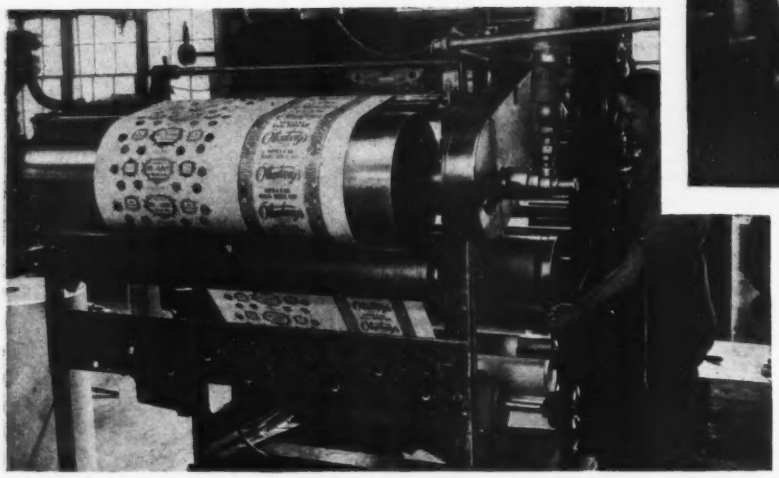
Keep RUST *and* CORROSION *off the face of your* ROLLS





MONEL-COVERED DRYER ROLLS
36″ diameter by 68″ face
Roll marks and rust stains caused much complaint with these cast iron dryers handling white and fancy colored zinc chloride treated fibre products. Applying $\frac{1}{16}$″ Monel sheet cover solved this problem completely. Monel covers give no trouble due to heat expansion, which is almost the same for cast iron, steel and Monel.

(Left) **MONEL-COVERED CHILLING ROLL**
15¾″ diameter by 50½″ face
The covering of this steel wax paper chilling roll with $\frac{1}{16}$″ thick Monel sheet eliminated all trouble experienced previously due to the rusting and pitting of the steel surface. The smooth and clean Monel cover insured production of an unblemished waxed paper, and improved the efficiency of the roll, making possible a one-third increase in the speed of the machine.

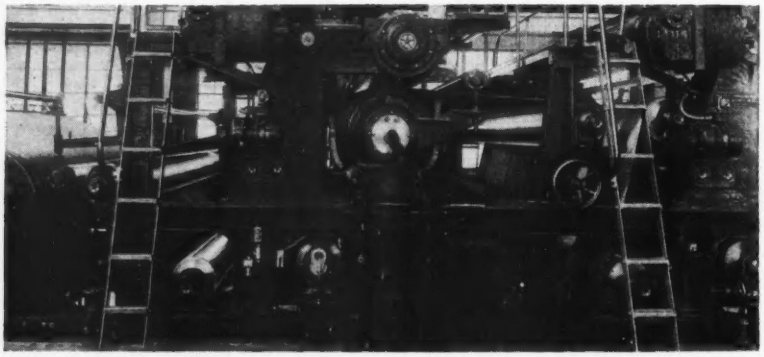
...by having them MONEL COVERED

Wear and corrosion-resistant coverings applied to paper machine rolls offer other advantages, too . . . .

ADD to your old rolls even longer life than they had when new. Get rolls covered with Monel* and you give them a hard, smooth surface that repels accumulation of pitch, and prevents sticking of fuzz or paper sheets.

By means of a patented welding process the Youngstown Welding and Engineering Co. now applies a Monel sheet covering to cast iron, steel, brass, bronze and aluminum rolls of 5 inches to 15 feet or more in diameter. Firmly and permanently anchored to the roll, the Monel sheet presents a ground and polished surface that is immune to rust, and stoutly resistant to wear and paper mill corrosives.

What is the performance of Monel-covered rolls? The captioned photographs show a few examples: Trouble and lost time eliminated, products improved, and in addition, production increased.



MONEL-COVERED WET FELT TUBE ROLLS — 15″ diameter by 240″ face
This press section is one of five Pusey & Jones wide, high speed machines in Southern Kraft mills which are equipped with $\frac{1}{16}$″ Monel-covered steel tube wet felt rolls, including the worm rolls. The Monel covers on these rolls afford full protection against corrosion and their smooth, clean surfaces do their part to cut down friction on the felts.

Instead of discarding old rolls, have them covered with Monel. The box below shows the wide variety now in use. And remember, your own or new rolls covered with Monel can be obtained through any of the prominent paper machine builders. Write for Bulletin C-3, "Monel in Pulp & Paper Mills"; "Monel-Covered Rolls on Pusey & Jones Machines"; "Covered Rolls—a new development for industrial protection", and "Monel-Nickel-Inconel† Covered Rolls". Address:

Monel-covered rolls are now serving in paper mills as:

Press rolls	Table rolls
Smoothing press rolls	Wire return rolls
Dryer rolls	Wire stretch rolls
Sweater rolls	Wire shaking rolls
Waxed paper chilling rolls	Wet felt rolls
Dance rolls	Sized paper guide rolls

† Reg. U. S. Pat. Off.

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67 WALL STREET NEW YORK, N. Y.

* Monel is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. This alloy is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL

PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

SIXTY-SIXTH YEAR

PAPER

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with PAPER TRADE JOURNAL.

Vol. CVI, No. 12 Thursday, March 24, 1938

Established Sept. 21, 1918
Consolidated Feb. 19, 1925
with PAPER TRADE JOURNAL.

Against United Kingdom Trade Agreement

Paper Manufacturers Present Oral Arguments To The Committee On Reciprocity Information Against British Reciprocal Agreement — D. C. Everest, President Of American Paper and Pulp Ass'n., Presents Brief.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 23, 1938 — The American paper industry had its innings last week in connection with the proposed United Kingdom trade agreement when it presented oral argument to the Committee on Reciprocity Information.

Experience in Vegetable Parchment Field

"The American paper industry is alarmed at the prospects of duty reductions on high priced tissue and other special papers in the British reciprocal agreement negotiations because of its experience in the vegetable parchment field covered by the Belgian agreement," said B. S. VanWyck, a director of the S. D. Warren company of Boston, with paper mills in Maine.

"The Belgian agreement reduced the rate of duty on this commodity one third. The result was an increase of imports to a value of only $30,000 greater in 1937 than in 1934, the year before the reduction became effective. To prevent the loss of tonnage, however, the American mills reduced their prices to cost. Belgium won no larger business, American workmen lost opportunity for work in plant enlargements and improvements which were contemplated, and the American mills operated without profit. Business does not operate this way permanently. These mills, in Pennsylvania, Michigan, Ohio, and California, can not be expected to operate permanently for the sole benefit of their employees.

Fear for High Price Tissues

"If the duty rates are reduced on British high priced tissue papers, the result will be approximately the same. Either the mills will reduce prices, and operate at a loss, wages will be cut, or output will be reduced and mill employees be deprived of work which will be transferred to their British competitors. Some American interest will be the loser, in order to provide more work and more business for British industry."

"The threat of the admission of Germany to the privileges of the reduced rates provided by a reciprocal trade agreement with Austria is something to be dreaded by the American paper mills," said J. A. LeRoy, vice-president of the McLaurin-Jones company of Ware, Mass. "Germany can produce simplex decalcomania, a paper specialty, at less than our cost of production, deliver it here and wreck a business we have been working for years to develop. We find that Secretary Hull has intimated a wish to have Germany brought into the list of nations which may enjoy the benefits of our duty reductions, which can be conceded if present discrimination against American business is withdrawn. The entry of Germany into the competitive field will be disastrous to our business. A concession to Great Britain should not be the medium of giving Germany unrestricted access to our markets. It is unjust to permit us intensively to cultivate and develop a market for a product to an extent which made its use greater than ever before, only to give competing foreign nations an opportunity to take away, without the expense of sales promotion, the business we have developed."

Germany and Great Britain Will be Gainers

That Germany, equally with Great Britain, will be the gainer by any duty reduction on filtering papers was the statement of A. L. Newton, of the Eaton-Dikeman Paper Company of Mount Holly, Pa., when he told of the manner in which Germany is already able to compete with England in the supply of the American market.

"Germany already undersells Great Britain," he said, "and any duty reduction granted Great Britain would not give any additional business to the United Kingdom. If the Germans are already able to give discounts which enable purchasers to buy laboratory paper at less than the British papers, a duty reduction will not materially benefit Great Britain. It will, however, bring about price reductions which will result in an industry, now operating at only a reasonable profit being forced to cut wages, or reduce hours of employment."

D. C. Everest Gives Basic Reasons

The paper industry's brief, filed in the name of D. C. Everest, president of the American Paper and Pulp Association on the basis of data compiled by

(Continued on page 32)

Negotiate to Reopen Former Outagamie Mill

Mill at Kaukauna, Wis. Last Owned By Patten Paper Co. Interests Two Parties—Mill Closed By Union Bag & Paper Co. May Be sold—Wall Paper Union Recognized—Continental to Reopen Mill—Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 21, 1938—Negotiations are being carried on to reopen the former Outagamie Paper Company mill at Kaukauna, Wis., last owned by the Patten Paper Company, Limited, Appleton, Wis. The mill was purchased several months ago by the City of Kaukauna as reimbursement for delinquent taxes.

Mayor Lewis F. Nelson, Alderman Jule Mertes, H. F. Weckwerth, manager of the Kaukauna municipal utility, and Henry Olm, a member of the utility board, all were in Chicago recently to confer with Carr Sherman, president of the H. P. Smith Paper Company. They were informed the company would make a decision within sixty days as to taking over the mill.

The Kaukauna officials were informed the Smith company finds its sales of super-wet strength meat wrappings is increasing by leaps and bounds. Production is now up to 100,000 pounds a month, and more facilities are needed. The company feels it cannot afford to expand in Chicago because of high operating costs.

Kischel Also Interested in Mill

Ed. Kischel, former western manager of the Union Bag and Paper Company, also is considering the formation of a company to take over the mill. He used the mill last fall to make experiments on pulp made of old corrugated boxes, string, straw, waste paper stock and other discarded materials. He has in mind the manufacture of pulp, certain paper grades and a high grade tissue. About 25 to 40 men would be employed from the start. He announced that he had $100,000 in capital back of him in such an undertaking.

Should the H. P. Smith Paper Company exercise its option on the Outagamie mill, Mr. Kischel is expected to negotiate for the mill abandoned by the Union Bag and Paper Company at Kaukauna some time ago.

Chemistry Students Visit Paper Mills

Sixty-four seniors in the college of chemistry of the University of Minnesota at Minneapolis, are making a two weeks' tour of Wisconsin during which they are visiting paper mills. Their first stop was at Wausau, where they visited the Minnesota Mining and Manufacturing Company, makers of abrasive papers. They were guests of the company at a noon luncheon at Hotel Wausau. From there they went to Appleton, Neenah and Menasha to visit the Kimberly-Clark Corporation mills and other plants. University instructors who accompanied them were C. A. Mann, Marvin Rogers and C. S. Grove.

Wall Paper Union Wins Recognition

Recognition has been given by the Wisconsin Labor Relations Board to the Wall Paper Workers Union of the Fox River Valley, an independent labor union, according to announcement last week by Voyta Wrabetz, chairman of the board. The union is made up of 110 men employed by the Kimberly-Clark Corporation in its Atlas mill at Appleton, Wis., and the Kimlark mill at Neenah, Wis. Application for recognition was made by George Ritten of Appleton, president of the union. It was opposed at a hearing in Appleton last month by the United Wallpaper Craftsmen, an affiliate of the American Federation of Labor. The union furnished proof it had no connection with its employers, and was not a "company union."

To Speak at Chemical Society Meeting

Dr. F. N. Peters, Jr., of the Quaker Oats Company, will address the Northeastern Wisconsin section of the American Chemical Society at its meeting March 24 in the chemistry lecture room of Lawrence College, Appleton, Wis. His subject will be "Industrial Uses of Oat Products." He is the company's director of research.

Golf Club Elects Paper Men

F. E. Sensenbrenner, assistant secretary-treasurer of the Kimberly-Clark Corporation, Neenah, Wis., has been elected president of the Butte des Morts Golf Club of Appleton and Neenah, Wis. Fred Heinritz, secretary of the Appleton Coated Paper Company, Appleton, Wis., has been elected vice-president.

Continental to Reopen Ground Wood Mill

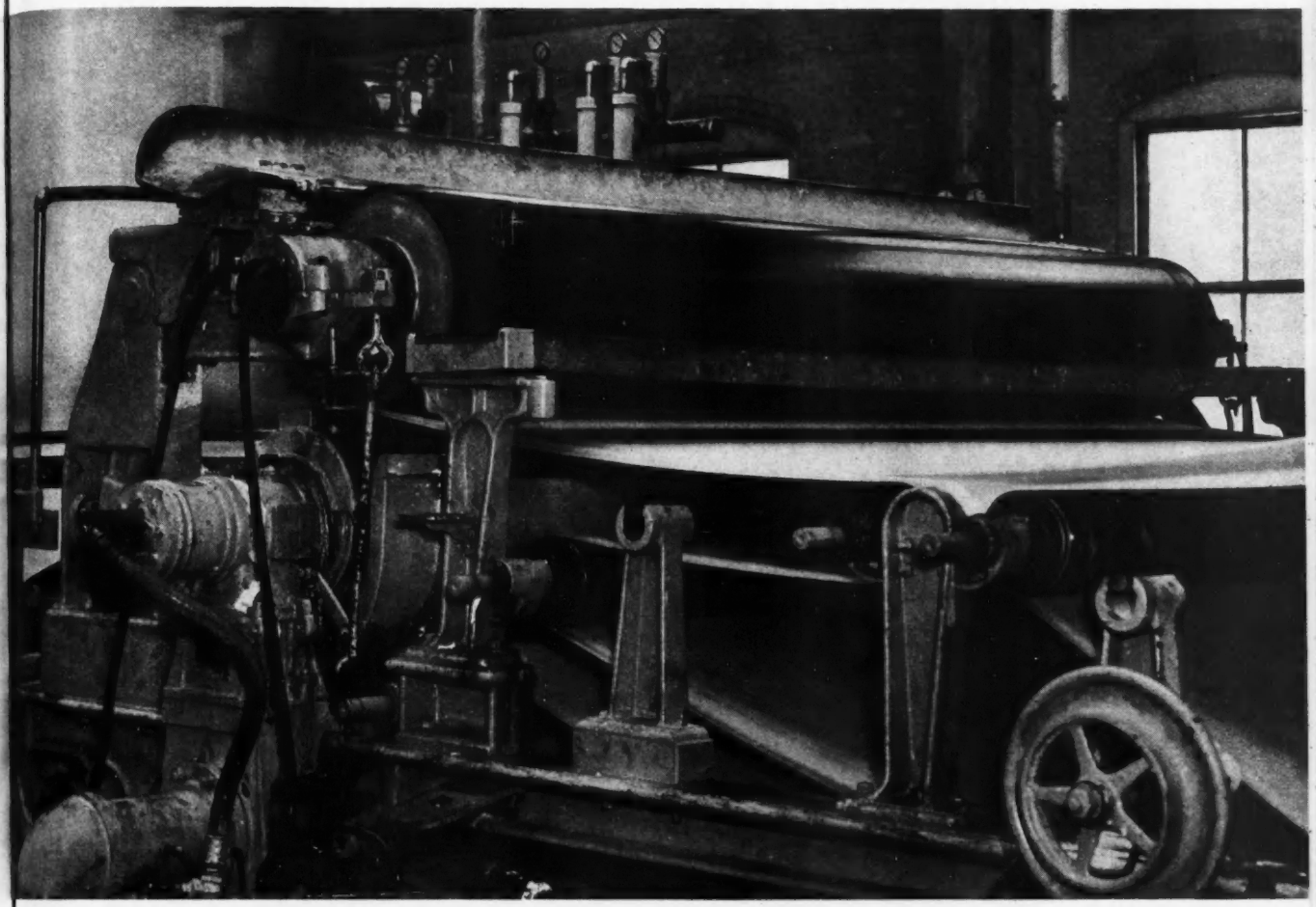
The Continental division of the Southern Kraft Corporation of Menominee, Mich. announced last week that its ground wood mill here will be reopened within two weeks, after being idle for six years. A. G. Stone, general manager of the division, issued the notice. The mill will supply pulp to the Kraft corporation's mill at Marinette, Wis. Since the shutdown June 1, 1932, groundwood pulp has been shipped in from Canada.

New Jeffrey Ball-Bearing Belt Idler

A new inexpensive ball-bearing belt idler for carrying moderate loads of semi- and non-abrasive materials is announced by the Jeffrey Manufacturing Company, Columbus, Ohio. This idler is of the conventional 3-pulley, 20 deg. troughing type, made for 14, 16, 18, 20, 24, 30, and 36-inch belts. Its ball bearings are of the commercial type, with a cork seal within a pressed steel labyrinth dust cap.

Pulleys are of 4-inch, diameter welded steel pipe with formed steel gudgeons welded in the ends. These gudgeons are connected within the pulley by steel tubing which prevents the loss of grease into the pulley proper. Shafts are 5/8-inch seamless tubing and are held by set screws within machine bored holes in the stands. As these shafts are hollow, the entire idler may be lubricated from either end through pressure fittings. Base angles are inverted to shed material.

WARREN ADDS 13 TO 14 . . .



AND GETS BETTER PAPER

The S. D. Warren Company installed its first STONITE* Roll in 1933. This most recent installation brings the total now operating in Warren mills up to thirteen. STONITE* number 13 is doing top press service on machine number 14 where it helps to produce more and better Warren paper.

The S. D. Warren Company, like the users of nearly 1400 STONITE* Rolls in other mills throughout the world, has found that STONITES*

1. Improve surface finish
2. Help eliminate two-sidedness
3. Greatly reduce pick-up and the number of breaks
4. Increase general efficiency and safety of operation

May we show you how you can enjoy these benefits on your weights and grades?

STOWE-WOODWARD, INC. NEWTON UPPER FALLS • MASS.

NEW YORK OFFICE • WOOLWORTH BLDG.

Stowe-Woodward Rolls are made on the West Coast by HUNTINGTON RUBBER MILLS, INC., 35 West Lander St., Seattle, Washington

STONITE★ Rolls

TOP PRESS AND SMOOTHING

★ *(Ebonite and Granulated Stone Composite U. S. Patent 1,787,890 Re. 18,111)*

Canadian Mills Likely to Limit Production

Leading Quebec Newsprint Manufacturers Indicate Policy to Prevent Ruinous Price Cutting By Curtailing Output—Lake Sulphite Pulp Announcement—Timber Cut in New Brunswick 121 Per Cent Higher in 1937.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 21, 1938.—There are many indications that the present situation in the newsprint market is not likely to bring about chaos in the industry as was the case in the past. The newsprint operators have apparently learned their lesson well and do not propose to see the industry again in the throes of cut-throat competition with the inevitable result of general bankruptcy. While no official announcement has been made to the effect, there are various signs that a policy of pooling tonnage is being followed as a measure of protection against another breakdown in the price structure. Various examples are quoted as supporting this policy.

Mills Likely to Limit Production

Thus at the recent meeting of the St. Lawrence Paper Mills shareholders were informed by the president that mills of the company were operating at between 60 and 65 per cent of capacity "which is the general average of the industry."

At the St. Lawrence Corporation meeting, shareholders were told that Brompton Pulp & Paper Company, a subsidiary, had obtained from the Canadian International Paper Company, a firm contract for the entire output of the mill at Bromptonville, which represents about 40,000 tons, or approximately 60 per cent of Brompton's newsprint capacity. This suggests a pooling agreement.

St. Lawrence Corporation shareholders were also informed that, while Lake St. John Power & Paper Company, another subsidiary, had a Hearst contract calling for delivery of 100,000 tons of newsprint annually, or the entire production of the company's mill, the full amount of this contract would not be shipped and that it was expected the mill would operate this year at an average of about 70 per cent of capacity.

Lake Sulphite Pulp Company

Lake Sulphite Pulp Company, Limited, in receivership, has issued a circular to shareholders outlining work to date and asking subscriptions to carry on its work. The circular states it is essential to engage independent counsel in interest of shareholders. Smaller stockholders are asked to contribute amounts up to $10 and larger holders have been asked for specific amounts based upon the size of holdings.

Committee says it feels progress has been made and it is hoped before long to be in a position to lay a plan before the shareholders that should lead to rehabilitation of the company.

Timber Cut in New Brunswick

A report tabled in the New Brunswick Legislature states that the total cut of saw-logs on Crown Land in 1937 was 121 per cent greater than in 1936. Hon. W. F. Pirie, the Minister, says that the total cut in 1936 was 76,000,000 feet against 138,000,000 feet for 1937 or an increase of some 92,000,000 feet. Figures for the past five years are: 1933, 48,840,378 feet; 1934, 107,799,051 feet; 1935, 136,107,266 feet; 1936, 76,070,001; 1937, 168,000,000.

The report goes on to say that cut of pulpwood on Crown Lands is estimated at 253,815 cords, an increase of 101,000 cords, or 66 per cent over the previous year. In a period of five years the next best cut was of 230,697 cords in 1934 and in 1936 it was 152,275 cords. The bulk of the cut consisted of spruce and fir with a total of 251,089.

This Bill Should Be Killed

Charles W. Boyce, secretary of the American Paper and Pulp Association, is sending to members of the industry copies of the bill introduced in the Senate, March 9, by Honorable Arthur H. Vandenberg of Michigan, "to amend the Reconstruction Finance Corporation Act, 1932, as amended, relating to direct loans for industrial purposes by Federal Reserve banks, and for other purposes."

At the time when he presented the bill to the Senate Mr. Vandenberg said, among other things—(Congressional Record page 4102): "Competent experts declare that there is a field for 100 pulp, kraft, and newsprint paper mills, particularly in the South, where the Savannah Pulp and Paper Laboratory is showing the way to utilize Southern slash and loblolly pine. Already 17 such mills are built, building, or projected—depending only upon the availability of capital."

Mr. Boyce states that this proposal seems to be not only uncalled for, but to threaten the paper and pulp industry with disaster, especially as it comes at a time when the industry is called upon to meet sévere foreign competition occasioned by duty reductions in reciprocal trade agreements.

Members of the industry are urged promptly to express their views as to this bill to Senator Vandenberg and to the Senate Committee, sending copies of their letters and the replies to the office of the American Paper and Pulp Association, 122 East 42nd street, New York, N. Y.

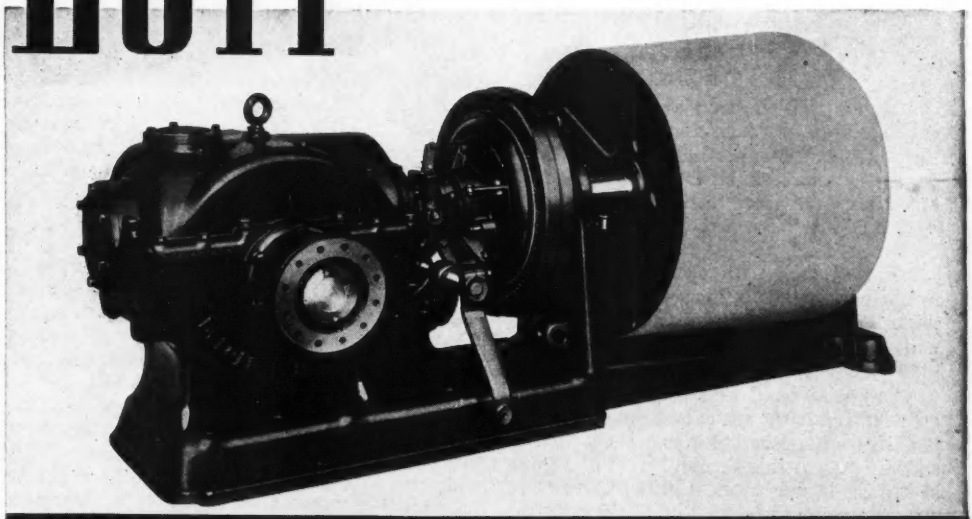
New Allis-Chalmers Bulletins

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has for distribution a new leaflet No. 2124-A on their type ARZ enclosed, fan cooled motors that are especially suited for locations where dust, dirt, acid fumes and moisture tend to shorten the life of motor windings.

The company also announces the release of a new Switchboard Bulletin No. 1190 which has just come off the press. This well illustrated bulletin describes the complete and modern switchboard line of this manufacturer and contains valuable information on this subject, as well as on oil circuit breakers and metal-enclosed switchgear.

The company also has released a new leaflet entitled "Distribution Transformers" covering 200 kva and 150 kva units for small substation service in all commercial voltages.

BELOIT



HEAVY DUTY
Hypoid Gear Drive

● **Gears cut of special steel are totally enclosed and operate in bath of oil. Gear and pinion shafts are mounted on roller bearings which are automatically lubricated.**

Equipped with improved Beloit automotive type clutch having unusually large air-cooled friction plate area. Oil lubricated throw out collar.

BELOIT IRON WORKS PAPER MACH'Y BELOIT WIS

THE BELOIT WAY IS THE MODERN WAY

BELOIT IRON WORKS, Beloit, Wisconsin, U. S. A.

Chicago Paper Industry Still Marking Time

Business Continues At An Unsatisfactory Rate of Activity — Salesmen's Assn. Employment Plan Creates Interest—Paper Trade Opposes Licensing Measures—Wood Pulp Rates For Middle West—Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 21, 1938.—Business in the Chicago area continues at a comparatively unsatisfactory pace as the paper industry keeps tempo with the general quietness in business circles. Little change in any lines were noted during the week. Those grades described last week as reporting an undertone of uncertainty for various reasons continue to remain about the same with eyes sighted toward developments next week. Chicago is to be host to the sulphite bond group on March 23 and this session, too, will be expected to assume genuine importance in light of recent developments.

The entire bond and ledger group is reported as quiet with buyers again evidencing little desire to replenish depleted inventories. Book and cover papers showed only a fair demand with a certain spottiness in buying in evidence. Kraft papers were steady to quiet though local executives are evidencing no particular concern in the expectancy of renewed stimulus in buying in the near future. Groundwoods and newsprints showed litle or no change. Waste papers continued to be extremely weak with both high and low grades of waste sharing in the unfortunate situation of finding a plentiful supply with little takers and inadequate storing facilities to curb the weakness.

New S. A. P. I. Plan Creates Interest

The Salesmens Association of the Paper Industry, headed by J. T. Burruss of the Albemarle Paper Mfg. Company, is embarking on a constructive program to service the sales divisions of the industry from an employment standpoint. It is understood that a placement service is to be perfected by the Association on a basis covering both the Eastern and Midwest divisions with the service clearing through Dr. E. O. Merchant in New York City. The Association plans to develop a standard service with the standard questionnaire form which will permit the unemployed salesman to list full qualifications as to experience, previous sales records and other pertinent facts. The data assembled from these questionnaires is to be available to sales executives and provides them with a splendid oportunity for quickly surveying available sales candidates with productive records. The service to the unemployed salesman is, of course, a most helpful development. Comments picked up in Chicago circles indicate a warm approval of the latest program of the wideawake Salesmens Association.

Paper Distributors Announcements

Hills-McCanna Company, Chicago, has recently issued to the trade a folder on "Bronze," an explanatory treatment of this interesting subject.

The Whitaker Paper Company has recently issued information on a new acquisition to its representative line, Darby Sales Folder, made by the Chemical Paper Manufacturing Company.

Bermingham & Prosser has recently sent out revised loose leaf price sheets revising a number of items and reporting certain new lines. An increase in newsprint prices and a decrease on Modern Form and Chipboards are noted. Snowwhite Commercial Announcement and K.V.P. Banquet Rolls are reported as newscomers on the handy loose leaf price list records.

Oppose Federal Licensing Measures

A concerted action on the part of paper manufacturers, jobbers and wholesalers as well as other Illinois executives, designed to prevent the passage of certain pieces of national legislation including the Borah-O'Mahoney Licensing Measure and the Byrnes Reorganization Bill characterized local activities during the past week. The dangers of the Borah-O'Mahoney measure are apparent to all, providing as it does the licensing of every corporation and setting up standards revocable by a Federal Board. The Reorganization measure, while containing some good, does delegate dangerous and un-Democratic powers to the President and, for this and other reasons, is securing a concert of opposition from Illinois business men.

Link-Belt Expands Stoker Lines

The Link-Belt Company, Chicago, has announced further expansion of its stoker line by the acquisition of patent and sales rights to the Super-Stoker, and that it assumes complete responsibility for engineering, research and design on this anthracite burner which has heretofore been made by the John Wood Manufacturing Company. Link-Belt also states that a new model anthracite stoker is to be announced in the near future which will embody modern improvements by Link-Belt engineers and the same basic principles that have been found so successful in the past.

Woodpulp Rates to Middle West

Out of regard for the requests of woodpulp importers to enable conclusion of contracts covering shipments of wodpulp through 1938, the interstate commerce commission has advanced the date for extending expiration of reduced import rates. When the new tariffs are issued shortly, in conjunction with ex parte 123 rate increases approved recently by the Interstate Commerce Commission they will show the increases of 10 per cent in rates on imported woodpulp from North Atlantic ports to destinations in Michigan, Ohio and Indiana.

Visit Southern Paper Mills

Percy Tigwell of the Beloit Iron Works and Clem Sisson of the MacSim Bar Paper Company, accompanied by their wives, have left for a tour of inspection of the Southern Kraft Mills. They will be gone about three weeks, their itinerary including South Carolina, Florida, Louisiana, returning by way of St. Louis and Alton, Ill.

Toronto Business Equals 1936 in Volume

Pulp and Paper Demand Declines Below 1937 Leve l— New 7 Million Dollar Pulp Mill May be Announced Soon — Alliance Mills Reports Higher Operations—Booth Felicitated on 75th Birthday — Other News.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, March 21, 1938—Business in the pulp and paper line since the beginning of the year has not reached the volume that it did during the corresponding months of 1937 and wholesalers report that it is about equal in turnover to what it was in the early months of 1936. There is no desire on the part of printers and other large consumers to buy very much stock in advance whereas a year ago there was a decided disposition to purchase ahead in view of the promising outlook and apprehension of rising prices. This fear has been removed and there have been no changes in quotations on bonds, ledgers, book or coated papers for many months. Most consumers are content that the jobbers and mills should carry the stock and are ready to stand by and await developments. Some of the fine paper mills are well employed but have no large orders ahead to fill the same they had for a long period a year ago. In regard to the establishment of another large pulp industry in Northern Ontario the question has been raised as to whether an addition to production facilities is needed. The price of pulp was cut ten dollars per ton for the first quarter of 1938 and will continue for another three months at any rate and considerable equipment in the pulp line is idle. Failure to relate capital expenditures to existing conditions has brought grief to the pulp and paper industry in the past.

New 7 Million Dollar Pulp Mill

In the Ontario Legislature last week, Hon. Peter Heenan, Minister of Lands and Forests for the province, told the members that before the end of the session he hoped to be able to announce a pulpwood agreement providing for a seven million dollar pulp plant in Northern Ontario. He said that the industry would be established in an area which the government had reclaimed for the Crown under the Timber Reallocation Act. In regard to the pulpwood areas of the Lake Sulphite Pulp Company and the Nipigon Corporation, Mr. Heenan declared they were two separate agreements and carried with them the obligation to build two separate mills. He added that a portion of the Nipigon area had been recently allotted to the Great Lakes Paper Company, Fort William, which is estimated to contain 500,000 cords of spruce and balsam. Mr. Heenan added that he believed the purchase of the Nipigon pulpwood limits by the Lake Sulphite Pulp Co. was a good deal as it involved a commitment to build a mill. He scored criticism to the effect that sooner or later the company might get a license to export wood to the Unied States and pointed out that the previous government gave permission to export the product from the Nipigon limit.

C. J. Booth Receives Congratulations

C. Jackson Booth, President and Treasurer of J. R. Booth, Limited, Ottawa, was the recipient of congratulations on March 15, the occasion of his seventy-fifth birthday. After leaving Queen's University, Kingston, fifty-four years ago, Mr. Booth entered the lumber business of his father, the late John Rodolphus Booth. Only one employee has a record of longer service with the company. During this period, Mr. Booth has seen the firm extend its operations from lumber to the manufacture of pulp in 1902, of newsprint in 1907, of cardboard in 1909 and, in recent years, to the manufacture of specialty papers. Mr. Booth is actively engaged in the direction of the company's affairs. He is also a directo• of the Quebec Forest Industries Association, vice-President of the Ottawa River Forest Protective Association, president of the Upper Ottawa Improvement Company, a member of the Federal District Commission, a member of the Ottawa Advisory Board of the Royal Trust Company and a Trustee of Queen's University.

Alliance Mills Doing Well

At the annual meeting of the Alliance Paper Mills, Limited, which was held in Toronto recently, encouraging reports were presented on the operations of the past year and showed the volume of business to be considerably ahead of the previous twelve months. During 1937, several improvements were made to the plant at Merritton, Ont. The following officers were re-elected for the coming year: President, Harold Crabtree; Vice President and Managing Director, George W. Pauline; Vice President and Assistant Managing Director, L. E. Fleck; Secy-Treas. John R. Leslie.

C. W. Paul Returns From the South

C. W. Paul, sales manager of the United Paper Mills, Toronto, and Mrs. Paul who spent several weeks holidaying at Fort Lauderdale and other points in Florida have returned home.

George W. Pauline on Western Trip

George W. Pauline, Toronto vice president of the Alliance Paper Mills, Merritton, left recently on an extended business trip to the western provinces and Vancouver.

V. L. Wilson Submits Winning Name

The name, "Tamper-Proof Fiber," has been given to the new fraud proof paper introduced by the Pejepscot Paper Company at its exhibit in the Waldorf-Astoria Hotel during paper convention week. This name was selected from the many suggested names tendered by contestants in the contest held by Pejepscot Paper Company to secure a name for their new product.

Valentine L. Wilson, of S. Walter, Inc., Philadelphia, Pa., submitted the winning name, chosen as most appropriate, both from the standpoint of originality and advertising value.

Diplomas Awarded Paper Course Graduates

Second Annual Paper Salesmen's Study Course Conducted by Paper Trade Assn. of Philadelphia Graduate 122—List of Graduates and Their Companies—Paper & Cordage Assn. Members Discuss Tax — Other News.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 21, 1938. — On Tuesday evening, March 15th, there assembled in the auditorium of Frank Institute on the Parkway, 122 salesmen of paper houses who amid the applause of a large audience, received their diplomas for having successfully completed the second annual Paper Salesmen's Study Course, conducted by The Paper Trade Association of Philadelphia.

William A. Hentz of the Thos. W. Price Company, presided, and after outlining the activities of this Course, presented Charles Barr, advertising counsel for Millers Falls Paper Company and Parsons Paper Company. Mr. Barr spoke on "The Art of Paper Salesmanship," and in part, said: "Nothing succeeds like success in days like these, the success attitude is an absolute necessity in the phychological make-up of any man who hopes to hold his head above water. Business may not be as good as it was in former years; it simply means, however, that business is harder to get, so we must all work harder and more intelligently to get." He cited, among other things, many ways to ingratiate one's self in the good graces of his customer, and had his audience in guffaws of laughter when he recited the story of the jumping beans.

William A. Meeks, executive secretary of the Typothetae, was among the invited guests.

Immediately preceding the presentation of diplomas, a rising vote of thanks was tendered Doris A. Lewis, executive secretary of The Paper Trade Association, and William A. Hentz, for their untiring efforts in making possible the splendid program of the entire Course.

The graduates and the houses with which they are identified are as follows:

Charles Beck Company: James W. Jordan; Robert D. Stringer; Miss Kathleen E. Nevin; Martin E. Penperson. Bentley Paper Company: Samuel H. VanHest. A. M. Collins Manufacturing Company: I. Pearce Edwards; A. E. Dorval. Champion Fibre Company: Francis J. Sammons. Dill & Collins, Inc.: George F. Corse; Alex. Smith. Enterprise Paper Company: Herbert Barnett; William H. Callingham; Peter Friedman; Harry Mandle; Max Novitch; Lewis Gerber. Garrett-Buchanan Company: John H. Truston; Francis Mahon; Robert Peale; William Leonard; Robert Loudenslager; William J. Beebe; Ernest J. Barrett; Paul L. Gallagher; Anthony J. Gentile; Boris Jasner; C. J. DeYoung Shipper; Charles Elitsky; John Korenko; Alfred H. Bennett; Willard C. Morse. Hollingsworth & Whitney: John W. Fitschen. W. C. Hamilton & Sons: Horatio J. Snyder; Joseph M. Whitehead; William R. Sickinger; Forrest E. Allebach; John P. Galt; Frank C. Grewer. A. Hartung & Company: Alfred C. Hirsh, Jr.; James T. Ryan; Charles W. Dunkle; Robert L. Hartung. Hooper Paper & Twine Company: Clyde A. Egan; John E. Guirato; Edward Kaufholz. Molten Paper Company: William F. Wolahan; Norman E. Kinkel; Samuel J. Johnston; Allen E. Russell. Penn Card & Paper Company: Milton G. Bass; Jesse C. Marcus; David Morein. Paper House of Pennsylvania: Henry J. Considine; Paul Klang; J. Earl Miller; William Simpers; Miss Mary A. Boyle; Jos. Parkhill. The Thos. W. Price Company: Carl E. Belles; Geo. J. Kelly; Clark Guild; Harry Ruch; Wm. C. Kramer; H. L. Leatherman; L. W. Mendenhall; John S Price; J. P. Richards, Jr.; William Simons; John M Strine; Mrs. Catherine D. Cochran; Miss Marie M. Quinn. Quaker City Paper Company: George M. Neff; Arthur T. Lawley; G. L. Baker; John B. McClain; Frank J. Gleason; John N. Wardle; B. M. Mercer; M. F. Worrell; Wm. U. Shriver; Alex Ferguson; Russell E. Greaves; R. G. Underdown; F. Warren Logan; John O. Franz, Jr. Raymond & McNutt Company: A. H. Aanderon; S. Trego Vance; Richard E. Jones; Goudlas Colson; George Crap; Jos. G. Konstance. Arthur B. Sherrill: Miss Mary Schnepp. Sabin-Robbins Paper Company: James J. Car. Sattherwaite-Cobaugh Company: Chas. D. Robinson; Miss Agnes Brown. Schuylkill Paper Company: J. Ralph Neill; Wm. J. Lyford; Thompson McIntire; Walter R. Kurtz, Jr. The J. L. N. Smythe Company: Stanleigh C. Brower; John N. Bland; Russell Forbes; Thos. F. Vernon; Tilden Rammel. D. L. Ward Company: F. L. Longstreth; Wm. J. O'Rourke; Robert C. Aarcher; Fredk. J. Shaughnessy; James E. Shaughnessy; Austin Siddons; Morris H. Walther; Charles E. Seary; Miss Elizabeth M. Miller; G. Irwin Charles; Chris Hanway. Wilcox-Walther-Furlong Paper Company: Hugh I. Monaghan; John Burt; Charles Paul. Wilder Bros. Company: Marshall Wilder. Whiting-Patterson Company: Lee Tomlinson; Harold T. Robinson; Fred Hinkle.

Paper and Cordage Assn. Discusses Sales Tax

The regular monthly luncheon meeting of The Philadelphia Paper & Cordage Association, held at the Adelphia Hotel on Friday, March 18th, was given over for the most part to a round table discussion of the Philadelphia City Sales Tax.

Virtually all of the members present spoke on the subject, and the consensus of opinion was that all goods sold direct to the consumer by the paper houses are subject to this tax, while goods sold for resale for use in packaging or wrapping goods for resale are exempt from taxation.

A resolution was unanimously passed, directing the Secretary to write a formal protest to the President of City Council, voicing the disapproval of the Philadelphia Paper & Cordage Association, Inc., and its members, of the sales tax and particularly to that feature of the tax law which makes it necessary to impose a tax on goods sold outside of the city.

Annual Shad Dinner Early in April

Joseph Miller, president of the Association announced that the Eentertainment Committee had completed its plans for the annual shad dinner, which

(Continued on page 50)

Financial News of Pulp and Paper Industry

St. Regis Reports Larger Sales and Earnings — Appeal Heard for Abitibi Reorganization—Union Bag Earns $1.32 Per Share—Consolidated Makes Annual Report — Bathurst Profits Rise — Other Late Financial News.

NEW YORK STOCK EXCHANGE

High, Low and Last for the Week Ending March 23, 1938

	High	Low	Last
A. P. W.	2¾	2¾	2¾
Armstrong Cork Co.	30¼	26	26
Celotex Corp.	18¾	16	16
Celotex Corp., pf.	51½	51	51
Certain-Teed Products Corp.	6¾	5⅝	5¾
Certain-Teed Products Corp., pf.	25⅝	20	20
Champion Paper & Fibre Co.	26½	26½	26½
Congoleum-Nairn Co.	19¼	16½	16¾
Container Corp. of America	13⅞	12½	12½
Continental-Diamond Fibre Co.	7¼	7	7
Crown-Zellerbach Co.	9⅜	8⅝	8⅞
Crown-Zellerbach Co., pf.	66½	66¼	66¼
Flintkote Co.	15¾	13½	14
Robert Gair	3⅝	3¼	3¼
Robert Gair, pf.	12	11	11
International Paper & Power	7⅜	5⅝	6¼
International Paper & Power, pf.	30¾	24½	25⅜
Johns-Manville Corp.	75	66	68
Johns-Manville Corp., pf.	124½	124½	124½
Kimberly-Clark Corp.	22	22	22
MacAndrews & Forbes	27	24	24
MacAndrews & Forbes, pf.	122	122	122
Masonite Corp.	31	28	28
Mead Corp.	11¼	9¼	9¼
Paraffine Companies, Inc.	38¼	33½	33½
Paraffine Companies, Inc., pf.	91	90⅛	90⅛
Ruberoid Co.	17⅜	14⅛	15
Scott Paper Co.	39¼	39	39⅛
Sutherland Paper Co.	22½	19⅝	19⅞
Union Bag & Paper Corp.	9⅞	9	9
United Paperboard Co.	4⅛	3½	3½
U. S. Gypsum Co.	64	60½	61
U. S. Gypsum Co., pf.	165	165	165

NEW YORK CURB EXCHANGE

High, Low and Last for the Week Ending March 23, 1938

	High	Low	Last
American Box Board Co.	8⅝	8	8
Brown Co., pf.	23	15¼	21
Great Northern Paper	27⅞	26⅛	26½
St. Regis Paper Co.	3	2¼	2⅜
St. Regis Paper Co., pf.	53½	51	51
Taggart Corp.	4	3⅜	3⅜

St. Regis Increases Profits

H. K. Ferguson, president, in making his annual report to stockholders of the St. Regis Paper Company says in part:

"The final figures for the year 1937 show a substantial increase in volume of sales and net earnings despite the sharp drop in general business which took place in the fourth quarter. This improvement was distributed throughout the various departments of the Corporation's activities which include book, catalogue, magazine, publication and tablet papers, also heavy duty multiwall kraft bags, bag filling machine rentals, royalties from licensed bag manufacturers, bleached and unbleached pulps, pulpwood, lumber and plastics. The prices of most of our products remained stable throughout the year despite higher costs of raw materials, higher wage rates and greater taxes. But the better financial showing was accomplished through operating efficiencies made possible because of the high rate of production to our capacity.

"The relations of our Corporation and its subsidiaries with labor have continued to be satisfactory and wage increases amounting to an average of 12 per cent were put into effect during the year.

"In 1937 net sales, royalties, rentals, etc., rose to $15,011,646.14 from $10,640,626.63 in 1936, an increase of $4,371,019.51 equal to 41 per cent. Relative cost of goods sold increased due to higher prices of raw materials, higher labor rates, increased taxes and greater provision for depreciation. However, operating income for the year amounted to $1,732,769.14 against $1,165,153.39 in 1936.

Other income credits including dividends on investments amounted to $570,611.58 against $481,275.37 in the prior year, while income charges representing interest paid, cash discounts, loss on retirements of property and equipment, preferred dividends of a subsidiary, etc., amounted to $743,191.59 against $600,726.71, resulting in net income before provision for income taxes of $1,560,189.13 against $1,045,701.85 last year, representing a gain of more than 49 per cent.

Federal Income Taxes including provision for surtax and undistributed profits, Canadian and foreign income taxes amounted to $371,314.40 against $315,617.33 in 1936. Total taxes for the year 1937 amounted to $784,341.30 against $497,865.15 in the previous year, resulting in an increase in 1937 over 1936 of 57 per cent.

Net Income for the year equals $1,188,874.73 as compared with $730,084.52 in 1936, amounting to a gain of 62 per cent. The net income figures in 1937 and 1936 do not reflect any benefit from the Corporation's equity in the undistributed earnings of Taggart Corporation and Subsidiaries, which earnings in 1937 equalled $410,640.02, and in which corporation St. Regis Paper Company holds 230,000 shares of Common Stock out of a total of 816,633 Common shares outstanding.

"In continuation of a rehabilitation program started in 1935, further substantial amounts of money were spent for the purpose of extension and modernization at the manufacturing plants of the Corporation in order to improve our products and enable the Corporation to reach broader sales markets. The expenditures at the bag manufacturing plants and machine shop were made to meet the increasing demand for heavy duty multiwall kraft bags for use in cement, lime, plaster and other rock products; also sugar, salt, fertilizer and chemicals. The adoption of the paper bag by the salt industry as a standard container for the various high grades of salt is another indicator of the expanding markets and increasing demand. Similar expenditures were made at the different paper manufacturing plants in order to permit the manufacture of higher grades of paper and also in the reconstruction of the pulp mill at Tacoma, Washington. In the latter case notable results have been obtained in the production of high grade bleached kraft pulps. A major outlay was made in connection with The Panelyte Corporation, engaged in the manufacture of laminated bakelite, for the purpose of expanding its facilities in the manufacture of products for the industrial, electrical and radio fields. These new products will supplement the materials produced for many years by The Panelyte Corporation for use in the refrigeration industry.

"The Federal Treasury Department's claim of

deficiency of Federal Income Tax of the Corporation and its subsidiaries for the year 1931 of $3,606,-028.74, based on the claim that the exchange of the Corporation's Niagara Hudson Power Corporation stock for United Corporation Common Stock was a taxable transaction, was settled for $941,067.15 with interest. The demand bank loans of the Corporation were increased by $1,100,000 in order to pay the required amount of this settlement to the Federal Treasury Department. Total secured bank loans of the Corporation and subsidiary companies with collateral amounted at December 31, 1937 to $7,000,000.

"The major investments of the Corporation consisting of 1,341,666 shares United Corporation Common Stock and 230,000 shares Taggart Corporation Common Stock remained unchanged during the year and at December 31, 1937 the approximate market value of all the Corporation's investments amounted to $6,405,000 against $13,080,000 at December 31, 1936. The Corporation received a dividend of $268,-333.20 representing 20 cents per share paid on the Common Stock of United Corporation in 1937.

Appeal For Abitibi Reorganization

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 21, 1938.—In the argument before the Court of Appeal, Toronto, W. N. Tilley, K. C., appearing for the bondholders' committee appealing against Justice Tague's dismissal of a motion by the bondholders' trustee asking approval of the Ripley plan for reorganization, stated that the assets of Abitibi Power and Paper Company properties, leases, licenses and interest in subsidiaries, probably amounted to $75,000,000 to $80,000,000. Mr. Tilley contended that the plan of reorganization was important from the aspect of time and also because of an agreement with the Ontario government, limited to a year, might go by the board. It was essential that these values should be maintained and Mr. Tilley added that he thought those interested had had enough of disputes. The organization needed new money and Mr. Tilley estimated that $8,000,000 would be expended over five years and the greater part of it within the next two years. It would also put the company in the position of having a larger working capital. Mr. Tilley declared that the scheme was designed to protect the security holders. The amount due to unsecured creditors was comparatively small —about $300,000. It was proposed to cover the sum by an issue of stock. The present plan endeavored to preserve the assets in such a form that real value could be obtained. To put the assets up for sale under the Judicature Act would involve great loss. Mr. Tilley submitted that the Ripley plan of reorganization was a well devised one to enable the owners of securities to get some value for their holdings.

The hearing of the Abitibi Power & Paper Company's appeal was adjourned on March 18th owing to the indisposition of Chief Justice Rose, one of the five judges sitting in the case. Before adjournment Justice Fisher said that, in the light of unsettled world conditions and business recession, it was his view that the various interests should get together in a compromise, guided by the judgment of G. T. Clarkson, of Toronto, receiver and manager, whom he lauded as a man of fine experience and integrity. Justice Latchford said that he did not feel he could substitute Mr. Clarkson's judgment for the judgment of the court.

Union Bag $1.32 Per Share

Union Bag and Paper Corporation in 1937 earned net profits of $1,434,595 after all expenses except Federal surtax on undistributed profits, estimated at $50,000, according to final audited figures contained in the company's pamphlet report being mailed to stockholders by Alexander Calder, president. This was equal to $1.32 per share on the 1,045,733 shares of common stock outstanding and compares with 1936 net of $387,391, or 37 cents per share, on the same number of shares. Taxes alone, accrued in 1937, including unemployment and old age benefit taxes, amounted to $553,537, or 53 cents per share, to compare with total taxes of $165,707 in 1936 and $144,982 in 1935. Tax costs in 1937 were equal to approximately one out of every three dollars of net profit after provision for Federal surtax and amounted to $160 for each employee of the company.

Net sales for 1937 as stated in the pamphlet report were $15,690,960, according to the final audited figures, an increase of $3,920,173 over 1936 and an increase of $6,156,334 over 1935.

Net profits for 1937 "reflect the improvement resulting from the new Savannah plant," Mr. Calder said. "Despite the general business recession of the last quarter of 1937, it is significant that the final net profit for the year ($1,434,595 before surtax) shows an increase of $345,471 over the published statements of profit for the first nine months."

"The completion of the three units at Savannah has materially reduced the necessity of placing contracts for pulp one or two years ahead as was previously necessary. At December 31, 1937, the total pulp purchase commitments of the company were approximately 10 per cent of its annual requirements, and represented only grades of pulp not yet produced at Savannah. Pulp from Savannah will supply the balance of our northern mill requirements," Mr. Calder also stated.

With the annual report, the company also mailed to stockholders a notice of the annual stockholders' meeting to be held April 2, 1938. At this meeting action will be taken on an amendment to the by-laws of the company proposing that stockholders relinquish their preemptive rights, at any time up to the close of business on December 31, 1939, to subscribe, prior to public offering, to any capital stock or obligations convertible into or bearing warrants or rights to purchase capital stock which the company may issue. This step will greatly facilitate the economical underwriting and prompt sale of the company's securities which will probably be issued during the next year to retire present bank loans and equipment notes.

Consolidated Paper Makes Annual Report

Expansion in sales and earnings, and improvement in working capital position, are revealed in the annual report of Consolidated Paper Corporation for the year ended December 31 last. It is the best showing since commencement of operations by the present corporation on January 1, 1932.

The consolidated income account shows that before providing for depreciation, depletion and bond interest, but after all expenses of operation, cost and maintenance and repairs, taxes, bank and other interest, carrying charges on properties not operated, bond and debenture interest of subsidiary companies,

there was a net income of $4,679,220. This compares with a net income in the previous fiscal period, which was nine months, of $2,721,030.

The entire net income in 1937 was placed to the credit of depreciation reserve. The same procedure was followed in the three preceding fiscal periods.

Consolidated balance sheet as at December 31, 1937, shows net working capital of $2,308,855, an improvement of $3,034,231 over the position at the close of 1936, when current liabilities exceeded current assets by $725,376.

The directors' report to shareholders, over the signature of President L. J. Belnap, contains comprehensive comment on the year's operations. One of the most interesting features of this report is a composite statement of income and expenditures for the six years ended December 31, 1937, showing total income of $84,535,720 in this period, including sales of manufactured products to an amount of $82,129,276.

Mr. Belnap indicates that during 1937 the physical volume (tons) of sales of all pulp and paper products for the year exceeded that of 1936 by 13 per cent. The increase in gross dollar sales was approximately 20 per cent, while the selling price of all products marketed by the corporation was increased by only 7 per cent.

Dealing with the outlook at the conclusion of his report, Mr. Belnap notes that the price of newsprint paper increased $7.50 per ton on January 1, 1938, for delivery in North America and that there has been a general increase in all overseas markets. "This increase," he adds, "will be largely absorbed by increased costs of labor, pulpwood and other materials."

Bathurst Reports Higher Earnings

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 21, 1938.—Substantially higher earnings are reported by the Bathurst Power and Paper Company, of Bathurst, N. B., for the fiscal year ended December 31st last, the improvement resulting from larger sales volume combined with more efficient operation, according to the president, R. L. Weldon. Sales showed an increase of nearly a million dollars to $3,904,523, and gross profits at $815,024 compared with $258,929 for 1936. Addition of other income at $100,322 made a total income of $915,346, as compared with $328,291. After sundry expenses, depreciation, income taxes, etc., the year's net profit was $454,146, equal to $1.13 per share on the "A" stock, as compared with $47,371, or 12 cents a share, for 1936. After paying $100,000 in dividends on "A" stock, $354,146 was added to earned surplus, increasing that account to $423,404.

In reporting on the statement, Mr. Weldon says: "Progress has been made with respect to the operations of the sulphite mill. The benefits from improvement to the plant were reflected in more efficient production methods and improvements to the quality, with the result that the company has increased its share of the available business. Sales of unbleached sulphite were favourable in volume and resulted in a satisfactory profit.

"Production of newsprint was strictly limited due to lack of balanced power facilities. Nevertheless, the mill manufactured newsprint on part time from the end of April onwards.

Wisconsin Revokes Byllesby License

[FROM OUR REGULAR CORRESPONDENT]

MADISON, Wis., March 21, 1938.—The securities division of the Wisconsin Banking Commission has revoked the license to sell Class A and B common stock of H. M. Byllesby & Company, Chicago, owners of power plants in several paper manufacturing sections in Wisconsin. The commission said the company had made certain changes in authorized issues in 1934 and had not reported them to the State. A hearing is to be held March 29 to determine whether the company shall have its license revoked entirely as a securities dealer in Wisconsin. The hearing is the outgrowth of investigation of B. E. Buckman & Company, investment firm, and charges by attorneys of "blank check" payments by the Byllesby company in the acquisition of a Wisconsin utility. Attorneys allege that William M. Dineen, former secretary of the Wisconsin Public Service Commission, received $63,000 of this money.

Rhinelander Net Income Up

APPLETON, Wis., March 14, 1938—Rhinelander Paper Company, Rhinelander, Wis., reported net income for 1937 of $240,293, against $237,121 the previous year. Earnings are equal to $1.60 per share against $1.58 on the basis of the new capitalization. Gross profits on sales last year were $835,178, as compared with $824,098 for 1936, and the operating profit was $300,084 against $335,473 in the previous year. Current assets were listed at $1,508,205 as of December 31, 1937, against $1,279,350 in 1936. Current liabilities were $376,145, as compared with $316,484 on the same date in 1936.

To Represent Pacific Mills

VANCOUVER, B. C., March 19, 1938—Leslie Roadhouse succeeds the late S. G. McCelland as sales representative in interior B. C. for Pacific Mills, Ltd., Vancouver, B. C. and Ocean Falls. Mr. Roadhouse will reside at Kelowna and will particularly interest himself in the fruit wrapping tissues supplied by the firm to the Okanagan fruit growing industry. For the past 11 years he has been manager of the Penticton Co-operative Growers.

Ship First Pulp From Brunswick

The first shipment of sulphate pulp manufactured from South Georgia pine by the Brunswick Pulp and Paper Company was shipped from Brunswick, Ga., March 9. The shipment consisted of eighty tons, or four solid car loads, two of which were destined to the plant of the Scott Paper Company, Chester, Pa., and two to the Mean Corporation, Chillicothe, Ohio. The Brunswick plant is jointly owned by these two paper manufacturing companies.

Bartgis Bros. Declare Dividends

The directors of the Bartgis Brothers Company last week declared the regular quarterly 6% preferred dividend of 37½ cents per share on the outstanding preferred stock of the Company, payable March 31, 1938, to holders of record March 20, 1938. The directors also declared a common stock dividend of 15 cents per share payable April 30, 1938, to holders of record April 20, 1938.

The U.S. As a Future Source of Wood Pulp*

By Charles W. Boyce [1]

A year ago wood pulp was the chief topic of conversation in the paper industry. Pulp prices were going up steadily. Spot tonnage was especially scarce and exceptionally high prices were being paid for immediate delivery. Although lack of pulp forced no mill to shut down, many feared that an actual physical shortage could not be avoided.

Today, a year later, wood pulp is still an important topic of conversation, but for exactly reverse reasons. Today the immediately available supply of pulp is large. Storage facilities at docks and at mills are crammed to overflowing. Pulp prices have already moved downward.

Fluctuations in Wood Pulp Prices

This quick change from one market extreme to another is fairly typical of a natural resource industry. From time to time apparent shortages develop during which prices sky-rocket. Stimulated by the possibilities of profit industry expands, striving to reach a level that later proves to be needed only at exceptional peaks. Frequently the excess tonnage cannot be absorbed for many years.

This cycle has occurred so frequently in the swiftly moving industrial history of the United States that it may well be looked upon as typical. In lumber and coal in the United States, and in copper, cotton, coffee, rubber and even in gold in world trade, shortages usually destined to be short-lived, stimulate over-production and substitution and invariably lead to quick reaction.

But the reaction is not always complete. Except in cases of vast material supply, new price levels are eventually established, reflecting that after all national and even world resources are limited. Some day, it is conceivable, actual shortage will begin to appear. In any long-range view this possibility is something more than academic illusion; it is something to be reckoned with — it is something to be reckoned with in the paper and pulp industry.

Pulp Production in Northern Europe

For instance, relatively little expansion in pulp manufacture occurred in Northern Europe during the recent building splurge. It may be that European manufacturers consciously and wisely decided to refrain from competing in mill construction. It may be likely that they could not compete because they are approaching the limit of their pulpwood resources.

Prior to the War the Northern European countries supplied the lumber demands of Europe. Requirements were not so great that production possibilities were not fully utilized. After the war lumber consumption suffered severely from substitution and normally low prices sank lower. Rapidly gaining pulp exports encouraged forest owners to shift from the manufacture of lumber to pulp.

Somewhere in this process there is a balance where the realization back to the stump is approximately the same in the production of lumber as it is in the production of chemical pulp. It may well be that this balance is being approached.

At any rate, expansion did occur in the Western Hemisphere. The facilities for the production of both unbleached and bleached sulphite pulp were substantially increased in Canada, and in the Southern states the manufacture of kraft pulp grew by leaps and bounds. The new Southern capacity, when its installation is completed, will approximately double the manufacturing possibilities of the region. In addition, some expansion occurred in the North and some in the West.

Swing of Pulp Industry to Western Hemisphere

The swing of the pulp industry to the Western Hemisphere is easily understandable. Constantly growing demand, stimulated by a not wholly unprecedented increase in paper consumption, has created a better marketing outlook and has encouraged research which has made available to the industry in a much greater volume the less expensive wood resources of the South and the West.

The demand for wood pulp has increased not only because the consumption of paper is itself gaining steadily in every country in the world, but also because pulp is being used more and more for the manufacture of commodities other than paper. This outside consumption is likely to keep on increasing, at least until the cost of cellulose derived from wood balances with the cost of cellulose derived from other sources. Unlike other sources of cellulose, wood pulp is a semi-manufactured material. In manufacture, impurities and variations in quality, both inherent in unprocessed materials, are eliminated. Moreover, wood pulp is cheaper.

No manufactured product of wide use possesses greater possibilities of expanded use than does paper. Here in the United States where paper is used lavishly if not wastefully, where per capita consumption is twice that of any other country, paper consumption leaped from depression lows to establish in 1936 and in 1937 new all-time volume peaks. There is evidence that in Great Britain, France and other industrial countries, consumption is now beginning to follow the American manner of use. In other countries, particularly where industrialization is progressing, consumption is bounding upward. Barring war and depression, consumption outside of the United States might easily double in the next decade. And certainly no one familiar with American trends expects decreases here.

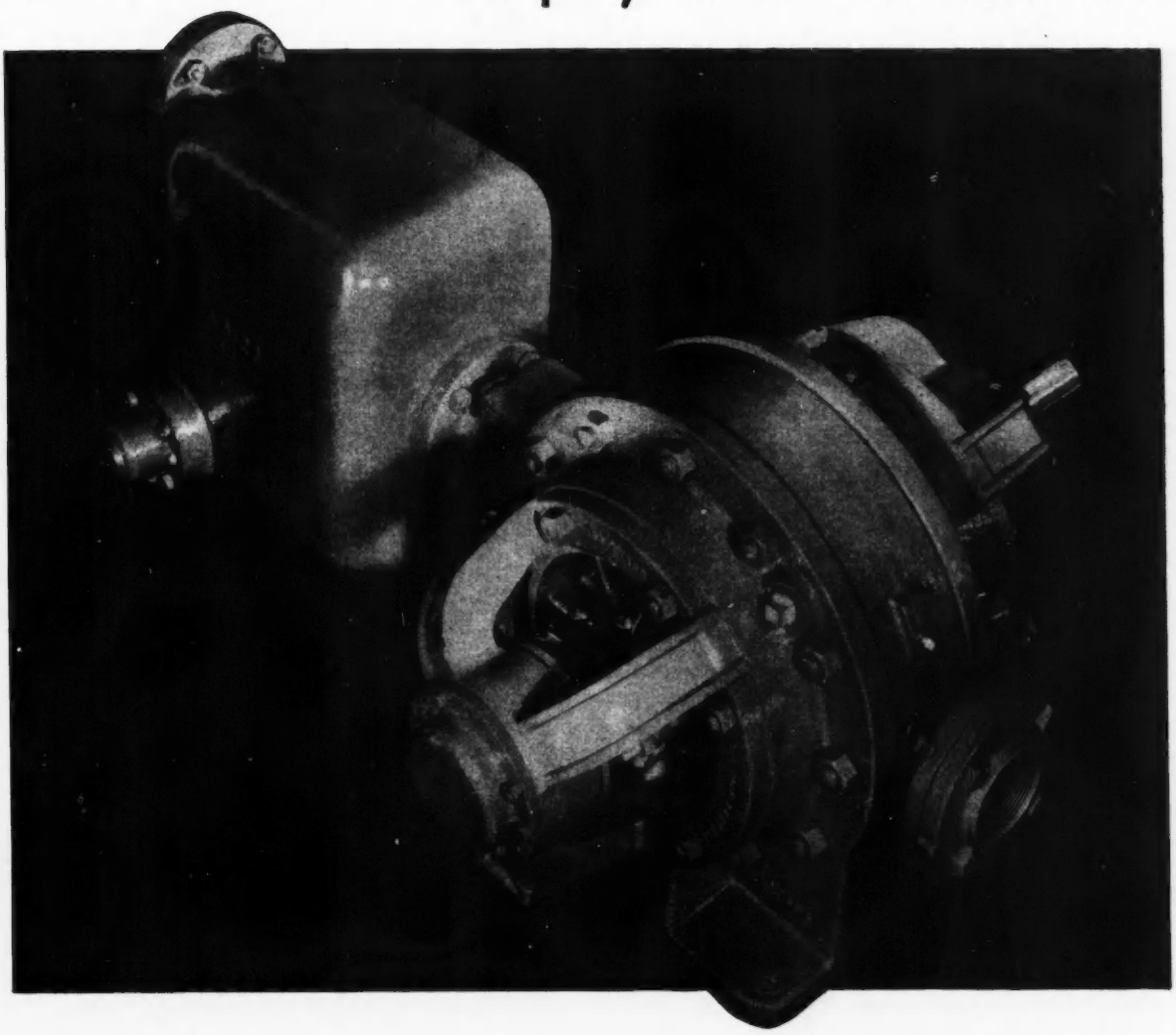
In view of these potentialities the question of supply is not mere idle speculation, especially if the evidences are trustworthy that Northern Europe is approaching the limit of its resources. The predicted swing to the Western Hemisphere is literally forced. It is possible because the United States and Canada possess the necessary wood resources.

Russia, of course, also possesses a vast wood resource, but Russian competition in world markets is not immediately expected. The consumption of paper is increasing rapidly in Russia and the domestic

* Delivered at the meeting of the Waste Paper Institute, held in connection with the Annual Convention of the National Association of Waste Material Dealers, at the Waldorf-Astoria Hotel, New York, March 15, 1938.

[1] Executive Secretary, American Paper and Pulp Association.

Nash Compressors, like Nash Vacuum Pumps, are reliable.



Miscellaneous compressed air requirements in the paper mill can best be handled with a Nash Air Compressor. The Nash Air Compressor has one moving part, a rotor cast in one piece, revolving without metallic contact, and requiring no internal lubrication.

These pumps are designed to operate at speeds suitable for direct connection to electric motors, are compact, and may be installed wherever convenient. Pressures up to 75 lbs. are available. Bulletins giving full information will be sent on request.

THE NASH ENGINEERING COMPANY

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industry is not yet capable of supplying it fully. Moreover, much of the vast spruce area of Russia lies inland, far removed from tide-water. Long rail shipments to tide-water will undoubtedly handicap Russian production in world competition. In the areas that are adjacent to tide-water, particularly those in the North, the long closed season of shipping makes difficult if not impractical the exportation of wood pulp which cannot be stored out-of-doors.

Expansion of the Industry in the South

The initial expansion in the South was confined largely to tide-water areas. Locations possessing optimum advantages, deep water harbors, low fuel costs, adequate labor supply both for mill and woods work, and nearby pulpwood resources, were relatively limited. It was inevitable that when one large company moved to increase production, all other companies would be forced to do likewise if they wished to keep their market position. In quite the same manner the newsprint industry expanded in Canada. When the provincial governments threw open for lease large areas of publicly owned lands, every company that wished to maintain or to secure a position in the newsprint industry was forced to move then or to be content with the less advantageous locations that were left.

It is not necessary for the Southern industry to experience the same subsequent penalties of over-expansion. The Canadian expansion was a one product development, dedicated overwhelmingly to export trade in newsprint. The grade of manufacture was fixed because all consuming countries have protected the domestic manufacture of other grades by tariffs.

The development in the South, on the other hand, is more nearly in the center of the industry. If the initial expansion in kraft boards proves too great, the industry can shift to other papers. Semi and fully bleached kraft pulps possess possibilities of substitution for sulphite pulp in a wide range of grades. Moreover, the consumption of kraft wrapping, bag and specialty papers, gives no evidence of approaching saturation.

The concentration of new mills in tide-water locations in the South has occasioned comment that the adjacent resources are not sufficient to support the additional pulpwood requirements. This comment cites the fact that in these same regions there is a large production of naval stores, lumber, piling, posts, ties and a host of other forest products. Opinion differs as to whether this comment is valid. Whether it is or not does not mean much, for the Southern industry does not intend to run indefinitely upon existing supplies; it plans to curtail its land ownership to areas sufficient to grow its wood supplies, supplementing the stands at present on these lands by outside purchase. The industry has already undertaken a cooperative movement more extensive perhaps than any other similar movement to provide for re-growth upon lands that are cut-over. The generally adopted rules for forest cutting will be applied not only to company-owned lands but also to outside lands from which pulpwood is purchased.

Pulp Production in West Increasing

Expansion in the West has recently not been so spectacular as in the South; but the pulp capacity, installed largely in the 20's, has been steadily increasing. All kinds of pulp can be made in the West. But all kinds of the more abundant wood species are not yet technically available. When adequate means of pulping Douglas fir are developed, then the production potential will be more than doubled, for Douglas fir is by far the predominating specie.

In the West, too, forest growing conditions are good. Pulpwood may not reach a usable size as quickly as in the South, but over a period of years the production per unit of area is probably greater. The more progressive companies are practicing forestry, although in a somewhat different manner than in the South.

Pulp production will undoubtedly continue to be a major industry in the older regions. Obviously shifts will occur. Some companies may not be able to meet the competition from the newer regions, but on the whole no extensive change is likely.

In this hurried survey it has not been possible to give statistical evidence and proof. Perhaps such proof is unnecessary. Surely, the investment of millions in the new regions evidences the faith of the industry not only in the future possibilities of wood pulp as a material required in constantly greater quantities in the United States and in the World, but also in the ability of American manufacture to hold its own in a duty-free world market.

It is perhaps too early to consider American competition in outside markets, for with the exception of some western manufacturers the industry is designed to meet domestic requirements. But sooner or later, if pulp consumption continues to increase as it now promises, an outside demand is bound to grow up. How far domestic resources will permit the industry to go in meeting this demand is indeed problematical. There is little doubt, however, that the industry can take care of future domestic consumption increases, and it can offset, if occasion requires, shrinkages in the tonnages of pulp that supplying countries are now sending to American converting mills. This assurance is important, for greater world demand is likely to draw heavily from present sources of American supply.

Pulp Arrivals Expanding at Albany

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., March 21, 1938.—Indications are that from now on there will be lively competition by railroad lines for wood pulp shipments from Southern states to the port terminal here. Word came from Washington this week that the railroads have been authorized by the Interstate Commerce Commission to establish a new rate of forty cents a hundred pounds on wood pulp from Savannah, Ga., to Hudson Falls without observing the long and short haul clause of the Transportation Act. The rate is expected to apply especially to shipments of the Union Bag and Paper Company. A cargo of pulp from these mills arrived at the port here last month and was transferred to Hudson Falls by rail. In the position for the new low rate, the railroads stated that the present rail water rate from Georgia to Hudson Falls is 36½ cents a hundred. The former all-rail rate was 48 cents. Estimated traffic is about 40,000 tons a year. Port officials are understood to be studying the Southern pulp situation both as to comparative rail and water rates and possible effect on pulp imports from Norway, Sweden and Finland.

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T-93

Boston Paper Men Honor Old Timers

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 21, 1938—Held in honor of two old-time members, John E. A. Hussey and John W. Vivian, the Fifty-second Annual Dinner of the Boston Paper Trade Association, given at the Algonquin Club Wednesday evening, in conjunction with the annual meeting, was a highly successful affair. Mr. Hussey has been a member of the association fifty-one years and was its president 1910-1912. Mr. Vivian, who has been a member thirty-six years, has never been willing to accept office, but is a valued counselor.

Before the dinner there was a reception and general get-together, and during the festivities, attended by approximately 160, community singing, led by E. L. Cummings. Following the banquet, President F. Bendel Tracy called the meeting to order. The report of Treasurer T. Charles Casey showed the organization in good financial condition. Three new members were elected: James J. Dwyer, of Stone & Forsyth Company; Paul Fraser, of Hollingsworth & Whitney Company, and Joseph Dixon, of the Mississquoi Corporation. It was announced that the membership, as of March 16, 1938, was 197, compared with 193 a year ago. Taps were sounded for the following, who had passed to the Great Beyond since the last meeting: C. L. Baird, F. H. Hird, Otto Karnheim, Nelson Curtis, Fiske Warren, R. B. Rising, A. B. Daniels, and Harold C. Upham.

President Tracy presented Mr. Hussey and Mr. Vivian, both of whom have done a great deal for the association. Mr. Hussey and Mr. Vivian responded graciously, in a few words.

The New Officers

The following were unanimously elected officers of the association: President, Walter J. Raybold; vice-president, John L. Hobson; second vice-president, Robert M. Stone; treasurer, T. Charles Casey; secretary, John H. Brewer. Executive committee, Norman Harrower, Charles W. Fields, W. Edwin Porter, Jr. Membership committee, W. N. Stetson, Jr., Royden Loring, R. M. Stone, Willard H. Loud, Hubert W. Lockhart. Arbitration committee, George W. Wheelwright, Arthur L. Hobson, Irving N. Esleeck, Jesse G. Swift, Harry C. Thayer. Auditor, William Ross.

The names were presented by Charles S. Proctor, of the membership committee, whose other members were M. L. Madden, Jesse G. Swift, John W. Vivian, and John E. A. Hussey.

In a few words before asking Mr. Raybold, the newly elected president, to speak, President Tracy mentioned the fact that at a hotel where he (Mr. Tracy) went while crossing the Andes, he found that stationery there was made by the Rising Paper Company (of which Mr. Raybold is president).

Mr. Raybold expressed his thanks for the honor the association had given him.

It was expected that Governor Charles F. Hurley of the Commonwealth of Massachusetts, would be the guest speaker, but he was hastily called to Washington on affairs of State and extended regret for his inability to be present.

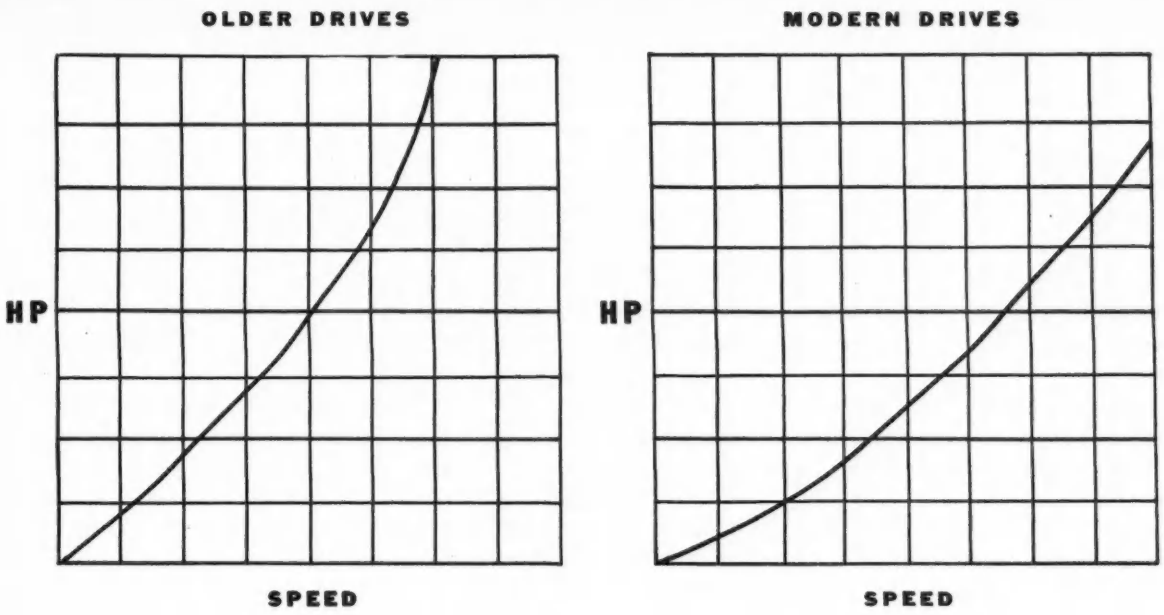
Major-General Charles H. Cole, who represented Governor Hurley said that in these days when dictators are so rampant, attention naturally turns to "National Defense," which was the subject of his address. General Cole discussed the needs of the country, quoting statistics.

At the head table were seated Major-General Charles H. Cole, President F. Bendel Tracy; First Vice-President Walter J. Raybold, Second Vice-President John L. Hobson, Treasurer T. Charles Casey, Secretary J. H. Brewer, and A. H. Chamberlain, secretary of the National Paper Trade Association.

Those In Attendance

Those present at the meeting included the following:

H. A. Allen, George C. Andrew, John A. Andrew, John A. Andrew, Jr., S. B. Andrew, S. Guy Ashley, Henry C. Barr, Sidney W. Bartlett, Paul M. Beach, Arthur F. Bell, W. J. Bigley, Graham Blandy, 2nd, Charles Bond, John L. Boynton, John H. Brewer, Charles J. Brown, J. F. Burke, A. M. Burr, C. A. Burrell, Matthew O. Byrne, P. R. Byrne, J. H. Calligan, R. H. Campbell, Alfred T. Carter, Hubert L. Carter, T. Charles Casey, Ralph B. Case, N. R. Catharin, A. H. Chamberlain, E. Howard Chase, David I. Cheever, L. L. Claflin, Nathan S. Clark, Major-General Charles H. Cole, W. C. Collins, Ashley Crowell, E. L. Cummings, Frank B. Cummings, T. K. Davis, Ralph L. Day, J. C. DeCoster, Adna C. Denison, L. R. Dix, Joseph W. Dixon, C. H. Dodge, J. J. Dwyer, Robert W. Ely, Irving N. Esleeck, Charles A. Esty, R. D. Ewing, Arthur F. Fay, C. W. Fields, Herbert C. Fowler, Paul B. Fraser, C. H. Gaffney, J. R. Halkyard, Clifton S. Hall, J. Frank Halloran, H. C. Ham, Eugene O. Hanson, Norman Harrower, Clarence W. Harvey, F. D. Hatch, Edgar P. Hay, Henry Heuer, Jr., Arthur L. Hobson, John L. Hobson, F. J. L. Hoss, Lee H. Hulett, R. Humes, Hartley A. Hurlburt, John E. A. Hussey, John P. Ingalls, John Kelley, E. E. Ketcham, Norman Kimball, Carl J. Knutson, Fred B. Korbel, H. A. Lindenberg, E. H. Little, Hubert W. Lockhart, Willard H. Loud, Walter A. Lowe, E. R. Lyman, M. L. Madden, Russell S. Madden, L. E. Maglathlin, F. W. Main, F. H. Masselink, L. R. Mathers, Fred E. May, W. J. McLellan, Herman Miller, George F. Morrison, H. A. Moses, K. L. Moses, John L. Munro, E. J. Murphy, E. J. Murray, Charles W. Nelson, C. E. Newell, Mr. Newhall, William W. Newton, J. J. O'Brien, Robert A. O'Neill, Maurice A. Park, N. J. Patterson, Arthur J. Pierce, Edward W. Pierce, R. C. Pierce, R. F. Piper, Joseph Porter, W. E. Potter, Jr., Charles S. Proctor, Lennox Ransom, Walter J. Raybold, C. E. Rice, John E. Roach, Herbert W. Robbins, William Ross, William C. Ross, Henry F. Savage, Charles A. Shaw, Walter P. Simonds, E. T. Simpson, Albert R. Smith, Don R. Smith, William S. Smock, J. D. Snell, Constant Southworth, E. H. Stone, H. A. Stone, Jr., R. M. Stone, George Stuhr, E. H. Sussenguth, J. H. Sweet, Jesse G. Swift, Royal Peter Teele, Charles W. Townsend, F. Bendel Tracy, H. H. Tucker, W. Gardner Very, John W. Vivian, K. H. Ways, James N. Weems, Jr., C. Frederic Wellington, Robert H. Welsh, George W. Wheelright, Ralph R. White, John R. Whitney, Frank H. Winter, E. L. Wood, Fred L. Wood, Franklin Wyman and J. D. Zink.



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MAINTENANCE cost and power requirements of obsolete drives are not only excessively high, but speed and production are directly affected.

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There is little doubt that many machines are actually being handicapped by low efficiency driving units.

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Obituary

Herbert R. Coffin

Herbert R. Coffin, 67, prominent paper manufacturer of Windsor Locks, Conn., and formerly vice-president of C. H. Dexter & Sons, Inc., died March 9, in Hartford Hospital after an operation for appendicitis.

Mr. Coffin was a native of Windsor Locks and began the manufacture of paper with his father. At the death of his father in 1910 he and his brother, Arthur D. Coffin, took over the business until its incorporation in 1914, Herbert R. Coffin serving as vice-president and purchasing agent. He retired from active business a few years ago.

Mr. Coffin served for 30 years on the town and school committee, and was active in establishing the High School. In 1908, he received the endorsement of both political parties and was elected as a Republican to the State Legislature in 1908. In the Legislature he introduced a bill, which was passed, making all toll bridges in the State free. He was active in the old Businessmen's Association and in Masonic circles as a member of Euclid Lodge, and the Sphinx Temple of Shriners of Hartford.

Surviving are his widow and two sons, Herbert R. Jr., of Manchester, and Douglas P., of Windsor Locks, Conn.

William F. Thomas

TORONTO, Ont., March 21, 1938—William F. Thomas, vice president of the Copp. Clark Company, Limited, Toronto, died at his home in Toronto on March 13, following a short illness, in his sixty-fourth year. In 1892 he entered the service of the firm and for forty-six years was associated with Harry L. Thompson, former President, who passed away only a few months ago. Mr. Thomas was made a director in 1898 and several years ago was appointed vice president and manager of the text book department. Surviving are his wife and one son, William Elliot Thomas.

Griscom-Russell Bentube Evaporators

Engineers of central power generating stations, industrial and process plants will be interested in a bulletin on evaporators for producing distilled boiler feed from hard or salty raw water, which has just been published by the Griscom-Russell Company. The bulletin explains plant operating conditions for which evaporators are desirable, outlines the general features and advantages of evaporators for producing pure boiler feed make-up, and describes the distinctive design of Griscom-Russell Scale-shedding Bentube Evaporators, which are built in various types for a wide range of boiler capacities and pressures. A section of the bulletin discusses the association of evaporators with the plant heat balance. This section explains the applications of single and multiple-effect evaporators, and reducing valve evaporator systems for process plants. The bulletin is profusely illustrated and contains a number of typical heat flow and heat balance diagrams. Copies may be obtained by addressing the Griscom-Russell Company, 285 Madison avenue, New York City, and asking for Bulletin 362.

AGAINST TRADE AGREEMENT

(Continued from page 13)

the Import Committee of the American Paper Industry, after reviewing the disastrous effects of the Canadian reciprocity treaty on newsprint of twenty-five years ago, gave five basic reasons why the American industry opposes the reduction of duties through the British agreement.

That the British agreement lists papers for possible duty reductions which with any such reductions would be admitted at laid down prices which the American mills could not meet without wage reductions was the principal argument against any reduction of duties. It was also pointed out that the items on which duty reductions are under negotiation include several grades on which the United States Customs Courts have rendered decisions upholding the present classification for duty purposes; a duty reduction on any paper would give to importers a duty advantage which the Customs courts had denied. That some of the possible reductions of duties would restore to foreign competitors advantages that have been won by American mills through the invention of new processes for making papers to compete with the foreign product. It was pointed out that the admitting of newsprint duty free has prevented commercial experiments for the use of southern woods for newsprint manufacture, and that American inventive genius has thus been nullified, and would be still further penalized if reductions under consideration are effected.

It was also shown that nations other than Great Britain would be substantial gainers through any agreement with the United Kingdom, and that in spite of the present Administration campaign against monopolies, the items listed for consideration in the British agreement are those in which British manufacturers are in such control of production facilities that they are nearly, if not entirely, of a monopolistic character, and that British controlled organizations would be offered a wider opportunity to compete with a group of American mills already in hot competition against each other for such tonnage as the market affords.

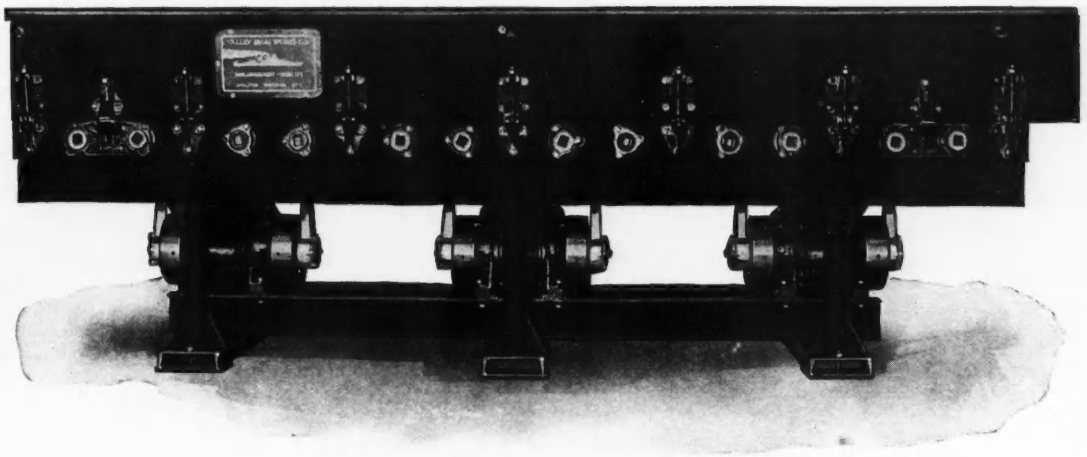
Special Problems Analyzed

The brief, which was not reviewed at the oral hearing, proceeded to analyze the special problems involved in the proposals to consider for duty reduction such items as sheating papers, stereotyping, pottery and carbobizin tissues, India and bible paper, simplex decalcomania paper, drawing paper, hanging paper, filtering paper, hand made paper, unmounted stencil paper, and blotting paper. The agreement also contemplates a reduction of the duty rates on paper products now using large quantities of paper, such as paper boxes, envelopes, playing cards, and a wide field of printed and lithographed paper.

Fire Damages Security Paper Mill

Fire of undetermined origin badly damaged the central building of the Security Paper Mill, formerly the Antietam Paper Company at Security, Md. The loss had not been estimated. Firemen from Hagerstown kept the flames confined to the building and protected two small buildings.

A NEW *Sweeping Advance* in SCREEN PERFORMANCE *and* DESIGN



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CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Financing and Operation of Pulp and Paper Mills

General Construction News

Laurel, Miss.—The Masonite Corporation, manufacturer of insulating board and other special wood pulp products, has plans under consideration for new addition to mill to be equipped as a chemical unit, utilizing waste from regular production as raw material. A number of chemical specialties will be produced, including a division for wood sugar output, using fine wood fiber as a raw material. Work is scheduled to be placed under way soon. No estimate of cost has been announced. Company research department, B. O. Stewart, assistant director, will be in charge of equipment installation.

Philadelphia, Pa.—The Roosevelt Paper Stock Company, 1006 Winter street, commercial paper products, has leased the two-story industrial building on local site at 908-12 Callowhill street, and will occupy for expansion. Structure will be improved at early date, and will be used for storage and distributing service, sales and other operations.

Jackson, Miss.—The Jackson Paper Company, 120 South Gallatin street, general paper products, has awarded general contract to W. T. Howie, 710 West Capital street, Jackson, for construction of its proposed new building on local site, recently referred to in these columns, and work on superstructure will be placed under way soon. New building will be one and two-story, to be used for storage and distribution, as well as office and general operating service. It is estimated to cost close to $40,000, with equipment. An award for the electrical installation has been made to the Newell Electric Company, 126 South Farish street, and for plumbing and heating, to the Davis Plumbing Company, 115 South State street, both Jackson. An automatic sprinkler system will be installed by the Automatic Sprinkler Company, New Orleans, La. N. W. Overstreet and A. H. Town, Standard Life Building, Jackson, are architects.

Detroit, Mich.—The Motor City Paper Tube Company, Schoolcraft avenue and Meyers road, manufacturer of paper tubes and kindred paper products, plans early rebuilding of portion of plant recently destroyed by fire, with loss estimated over $45,000, including building and equipment, stock, etc. The structure is owned by Albert A. Shaerer, 13910 Montrose road, and occupied by company under lease.

Binghamton, N. Y.—Agfa-Ansco Corporation, 29 Charles street, manufacturer of photographic and other special processed papers, films, etc., has approved plans for new addition to plant, to be one-story, adjoining present Factory No. 42. It is estimated to cost close to $50,000, with equipment. General contract for erection has been let to the Wigton-Abbott Corporation, 1225 South avenue, Plainfield, N. J., and work will be placed under way at once. Lockwood, Greene Engineers, Inc., 30 Rockefeller Plaza, New York, N. Y., is architect and engineer.

Chester, Pa.—The Scott Paper Company, manufacturer of tissue stocks, has advanced operations at mill, and is now running at considerable increase as compared with this time a year ago. Output of finished products in the first two months of 1938 showed an advance of 28 per cent over the production in the same period of 1937. Present operations will be maintained without change for an indefinite time.

Richmond, Ind.—Johns-Manville Corporation, 22 East 40th street, New York, N. Y., manufacturer of roofing products, fiber specialties and other building materials, has begun superstructure for new one-story addition to fiber conduit plant at N. W. Seventh street, Richmond, recently referred to in these columns, and will push erection to early completion. It will cost about $60,000, with equipment. The Hughes-Foulkrod Company, Schaff Building, Philadelphia, Pa., is general contractor. Francisco & Jacobus, 511 Fifth avenue, New York, are architects and engineers.

Clinton, Iowa—In connection with a fund of about $35,000,000 for expansion and improvements in present plants, and construction of new mills, E. I. duPont de Nemours & Company, duPont Building, Wilmington, Del., has arranged an appropriation of close to $5,000,000 from such gross fund for construction of new mill for its Cellophane Division at Clinton, Iowa, previously referred to in these columns. Work on the plant is scheduled to begin at once, with erection to proceed actively during 1938. Plant will comprise a main five-story unit with a number of smaller adjoining structures. Plans have been prepared by company engineering department, first noted address.

La Tuque, Que.—The St. Maurice Power Corporation, Montreal, Que., a joint subsidiary of the Brown Corporation, La Tuque, manufacturer of kraft fiber products, and the Shawinigan Water and Power Company, Montreal, has been granted permission to proceed with construction of new hydro-electric generating station on the St. Maurice River, near La Tuque, a considerable part of output to be used by the Brown Corporation at its large La Tuque mill, where an expansion program will be carried out for considerable increase in capacity. New hydro-electric power station will have an initial capacity of 162,000-horsepower, divided into four hydro-generating turbine units. Project will include a transmission line, power substations and switching stations.

and is estimated to cost close to $12,500,000. The company has been authorized, also, to arrange for a bond issue to cover up to 75 per cent of cost of construction. Surplus power from the new station will be used by the Shawinigan company, noted. The plant is estimated to require from 36 to 48 months for completion.

New Companies

Brooklyn, N. Y.—The Schrier Paper Corporation has been organized with capital of 200 shares of stock, no par value, to deal in commercial paper products, including wrapping papers, etc. New company is represented by A. Haskell Stewart, 401 Broadway, New York, N. Y., attorney.

Saginaw, Mich.—Sears, Inc., 217 West Genesee avenue, has been chartered with capital of $500,000, to deal in paper products of various kinds. Herman J. Sears, 423 North Granger street, Saginaw, is principal incorporator and head.

Cliffside Park, N. J.—Bi-Rex Specialties, Inc., has been chartered with capital of $30,000, to manufacture and deal in paper products of various kinds. Edward V. Anderson is principal incorporator and representative.

Bates Co. Opens Vancouver Plant

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., March 19, 1938—The Bates Valve Bag Company, Ltd., which was recently incorporated as an extra provincial company in British Columbia has now established a plant at 146 West Second avenue, Vancouver, B. C. The firm will engage in the manufacture of heavy duty multi-sewn paper bags now being used extensively for cement, lime, plaster and other rock products, as well as for flour, sugar and other food products.

The bags are a patented self-closing container, which are filled by means of a special patented machine provided for users of the bags by the Bates Company. Paper used in the bags will be furnished by Pacific Mills, Ltd., from their plant at Ocean Falls, B. C. Premises for the new plant now secured cover an area of 139 by 65 feet with additional warehouse space of 40 x 139 feet immediately adjoining. Operations will be started in the near future with an initial staff of around 40 persons.

The new plant is the third to be established in Canada by the Bates Company, the others being located at Three Rivers, Que., and at Dryden, Ont. The Canadian headquarters are at Hamilton, Ont. Ten other plants are operated by the company in the United States. E. P. Engress has been appointed manager of the new Vancouver, B. C., plant.

British Columbia firms already using the patented bags include B. C. Cement Company; Gypsum Lime and Alabastine Company; Pacific Lime Company, Ltd.; B. C. Sugar Refining Company, Ltd.; and the Consolidated Mining and Smelting Company of Canada, Ltd.

Michigan Division Superintendents Meet

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., March 18, 1938.—The March meeting of the Michigan Division of the American Pulp and Paper Mill Superintendents Association was held at the Park American Hotel Thursday evening, March 17. The attendance was the largest of any meeting in recent years, seventy-two being present.

Chairman Dan Stacy presided and following the dinner turned the meeting over to Percy Tigwell and T. C. Roberts of the Beloit Iron Works who furnished the program. Mr. Tigwell gave a brief address after which three different films were shown. The first was of the Beloit Horizontal Press section, the second showed their short top wet felt on a cylinder machine. The first two were silent but the third one, was a sound and talking film. A detailed showing of the cutting of the logs following the process through to the finished product held the attention of all those present and afforded an instructive evening of entertainment.

Ray L. Barton, chairman of arrangements for the annual ladies' night, announced that the date was Saturday April 30 to be held in the Main dining room of the Park American. It will be a dinner-dance and an elaborate floor show is promised. Tickets were distributed and the usual large crowd will be present.

Those in Attendance

Those attending the meeting were, Arthur Cole, H. C. Bradford, Heine Neudorf, of the Rex Paper Company; Dan Stacy, H. W. Hartman, Wm. Wessel, Wm. Barnhart, Joe Coleman of the American Box Board Company; L. Hill, G. H. Rice, L. A. Liberte, Bert Crooks, R. B. Stewart, A. L. Perlick, C. R. Gibbs, of the Kalamazoo Vegetable Parchment Company; Glen Sutton, Arnold Weller, Al Sherwood of the Sutherland Paper Company; C. A. Yorkers, Joe Widemeyer, H. B. Johnston, Joe Denany, W. A. Kirkpatrick, Wm. Kennedy of the Allied Paper Mills, R. H. Smith, A. B. Milham, O. F. Fischer, Wayne Croty of the Bryant Paper Company; Donald Wolfe, W. F. Wolfe, C. F. Sison of the Mac-Sim-Bar Company; E. H. Barnes and Wm. Shaw, of the Michigan Carton Company; Walter B. Hadley, F. C. Payne, Ludwig Hergch, Oscar Rowe of the Detroit Paper Products Corporation; Homer E. Stafford, Norman J. Cowie, Carl C. Schneider, Peter Sewick, Hawthorne Paper Company; Percy Tigwell and T. C. Robert, Beloit Iron Works.

R. L. Barton, Paul de Guchery, Geo. C. Schmid, M. S. Fogarty, W. Hastle, of the Michigan Paper Company; James Wise, W. H. Cunningham, Jake Boodt, Kalamazoo Paper Company; J. R. Verdon, W. S. Taylor, American Cyanamid Corporation.

H. M. Eastman, Hercules Powder Company; H. M. Faber, Sherwin Williams Company; Harrison Starr, Price and Pierce; H. C. Pearson, Pioneer Paper Stock Company; O. C. Cordes, Downingtown Manufacturing Company; Lawrence Lynd, R. T. Vanderbilt Company; Paul Dumas, Chrominum Corporation; C. Baldy Smith, Huron Milling Company; F. L. Zellers, French Paper Company; J. F. Shuman, Atterbury Brothers; W. H. Siewert, J. Heisley Company; C. Cox, Gibbard Company; L. A. Mennier, Eddy Paper Company; H. D. Frost, Sinclair Company; R. W. Holden, Stowe Woodward Company; Don Sisson, A. E. Woolaam Company; L. F. Knickerbocker, Asten Hill Manufacturing Company; George A. Thompson, Jr., B. F. Perkins Company; and H. E. Stratton, PAPER TRADE JOURNAL.

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COMING EVENTS IN THE PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

AMERICAN PULP AND PAPER MILLS SUPERINTENDENTS ASSOCIATION. Annual meeting, Royal York Hotel, Toronto, Ont., June 22-24.

FUTURE OF THE PAPER INDUSTRY

The expansion of the paper industry is dependent upon an ample supply of raw materials among which wood pulp is the most important source of fiber for paper making. For the purpose of estimating the probable future price of pulp wood on the stump in the Southeastern United States, where the production of kraft pulp and paper is now rapidly expanding, the American Institute For Economic Research, has very recently published a comprehensive report; which says in part:

"We believe that future increases in the demand for forest products will come primarily from paper manufacturers and others for whom wood pulp is an important raw material. Although it is expected that the demand for wood pulp products will greatly increase in the United States, larger percentage increases will probably occur in many other countries of the world.

"Present sources of supply will no doubt continue to provide much of the wood pulp used. However, the potential sources of supply which can be expected to provide the larger production of wood pulp anticipated are the forests of Canada, Alaska, the Pacific Northwest, and the Southeastern United States. No shortage of wood pulp is expected during the period covered by this survey.

"The problem is not a local one. Pulpwood is converted into wood pulp and wood pulp is a world commodity. The United States places no import duty on pulpwood, wood pulp, or newsprint. Therefore, the price of wood pulp is established in the world markets and will influence, as well as be influenced by, the price of wood in any particular locality. If pulp wood can be imported by any mill for less cost than the wood can be obtained locally, that mill will of course purchase the imported wood. On the other hand, if distant pulp mills will pay a higher price than those nearer the wood supply, owners of timber lands will seek outside markets. Such circumstances will in large part determine the future price of pulpwood in the Southeastern United States, and will therefore be the most important influences affecting the price that owners will be offered for their wood and stumpage rights.

"The forest cut which eventually becomes wood pulp is only a small percentage of the total. For example, during 1928 in the three countries of Norway, Sweden, and Finland, the production of wood pulp was but 38 per cent of total wood products. In the United States, pulpwood has recently been about 5 per cent of all forest products."

The report is composed of two sections, one of which deals with lumber and miscellaneous forest products, and the second discusses the future demand for pulpwood. In reference to the future demand for paper, the report says in part: "The paper industry is the leading consumer of wood pulp, inasmuch as more than 90 per cent of the total quantity of fibrous raw materials used in paper manufacture is wood pulp. This disregards waste paper, but of course waste paper is primarily wood pulp made available for re-use.

"It seems probable that the largest future increases in paper consumption will occur outside of the United States. These increases will probably be most marked in countries where illiteracy is decreasing and the standard of living is rising. In the United States, per capita consumption increased from 58 pounds in 1899 to 227 pounds in 1936. Paper, although in some of its uses subject to competitive substitution, is a substitute itself for some materials. For example, paperboard boxes are now widely used in lieu of wooden boxes. Paper products from wood pulp substitute for metal and china containers.

"To some extent, pulp wood may be a by-product of the lumber industry. Large limbs and tops of trees unsuitable for lumber are usually satisfactory for pulping. Several large saw mills have constructed pulp mills adjacent to their sawing operations, in order to use sawdust and other waste for sulphate pulping.

"Pulp is now, and probably will continue to be,

made from soft woods which are coniferous. This means that only Asia, Europe, and North America could supply future requirements of pulpwood. Japan is the only large pulpwood producer in Asia, but can never be a large exporter of pulpwood as her supplies are limited. Current production of pulp confirms the prediction that Sweden and Finland could increase production most.

"The Hale Report (Senate Resolution 205, 73rd Congress, 2nd Session), refers to the Pacific Coast and to the South as the two sections of the country which will dominate prospective future requirements for the supply of pulpwood."

A summary of the conclusions embodied in the report is as follows: "Future increased drain on world forests will come chiefly from an increased world demand for paper and other wood products. Future demand for paper will increase more rapidly in other countries but will continue in the United States rapidly for the next twenty-five to thirty years. Present expansion of sulphate pulp mills in the South will produce capacity larger than current demand. The prices of paper, pulp, and pulpwood are advancing and changes in the price of pulpwood follow changes in the prices of pulp and paper. The price of pulpwood is determined by supply and demand. Future price per standard cord may advance to $6 or more per cord, f.o.b. mill within the next few years. Future stumpage return for a well managed, well stocked and favorably located forest stand, should average as high at $1.50 per acre per year with pulpwood at $6 per cord (128 cubic feet) and should advance nearly dollar for dollar as f.o.b. mill prices of pulpwood advance. Investments in well stocked favorably located forest stand are a practical hedge against inflation."

This work is entitled "A Report on the Future of the Paper Industry in the Southeastern United States and the Effects in Stumpage Values," and is published by the American Institute For Economic Research, 1200 Massachusetts avenue, Cambridge, Mass., a non-political, non-commercial organization. A limited supply of copies of the report is available at $3.50 per copy from the publishers.

O. A. Jorgenson is Elected President

VANCOUVER, B. C., March 19, 1938—O. A. Jorgenson, assistant manager, B. C. Pulp and Paper Company, Ltd., was elected president of the Canadian Forestry Association at its annual meeting in the Terminal City Club, Vancouver, B. C. He succeeds F. B. Brown, secretary, B. & K. Logging Company. Mr. Brown's annual report paid tribute to work of the association under direction of Charles Wilkinson, its manager, during 1937.

He paid particular tribute to the valuable work of junior forest wardens, and in this was joined by C. D. Orchard, assistant chief forester for British Columbia, who gave a short talk.

Production Ratio Report

(These statistics are based upon paper production reports to the American Paper and Pulp Association)

COMPARATIVE MONTHLY SUMMARIES

Months	1938(c)	1937(c)	1936	1935	1934
January	63.9%	90.3%	76.1%	65.8%	.....
February	68.9%	90.1%	77.9%	70.0%	.....
March	.....	90.3%	76.0%	70.5%	.....
April	.....	92.1%	82.3%	70.0%	.....
May	.....	90.6%	81.6%	69.4%	.....
June	.....	87.3%	80.7%	72.3%	.....
July	.....	81.8%	77.3%	64.9%	.....
August	.....	82.9%	81.5%	70.9%	.....
September	.....	78.6%	80.5%	71.9%	58.2%
October	.....	73.5%	87.6%	75.6%	64.7%
November	.....	61.9%	88.0%	75.3%	61.7%
December	.....	54.5%	85.9%	71.2%	59.6%
Year Average	.....	80.6%	81.3%	70.5%	.....
Year to Date					
First 10 weeks	67.0%	90.1%	77.3%	67.9%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1938		CORRESPONDING WEEKS, 1937	
*February 5	67.0%	February 6	88.1%
*February 12	67.9%	February 13	90.2%
*February 19	68.7%	February 20	90.4%
*February 26	72.0%	February 27	91.6%
*March 5	69.4%	March 6	89.2%
*March 12	70.4%	March 13	90.6%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
Ratio Limits	Feb. 5, 1938	Feb. 12, 1938	Feb. 19, 1938	Feb. 26, 1938	March 5, 1938	March 12, 1938
0% to 50%	112	109	91	96	89	57
51% to 100%	199	201	210	204	197	155
Total Mills Reporting	311	310	301	300	286	212

* Subject to revision until all reports are received.
(c) Basic capacity data have been adjusted to correspond with ratings reported by individual companies.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

Mos.	1938(e)	1937(e)	1936	1935	Mos.	1938(e)	1937(e)	1936	1935
Jan.	55%	80%	61%	61%	July	....	67%	69%	59%
Feb.	61%	86%	67%	67%	Aug.	....	74%	75%	65%
Mar.	....	87%	68%	67%	Sept.	....	70%	76%	69%
April	....	89%	70%	61%	Oct.	....	66%	82%	76%
May	....	86%	68%	61%	Nov.	....	56%	79%	70%
June	....	75%	68%	65%	Dec.	....	46%	74%	60%
Week ending Feb. 5, 1938			59%		Week ending Feb. 26, 1938			61%	
Week ending Feb. 12, 1938			60%		Week ending Mar. 5, 1938			59%	
Week ending Feb. 19, 1938			60%		Week ending Mar. 12, 1938			61%	

(e) Basic figures revised to include new members of the National Paperboard Assn.

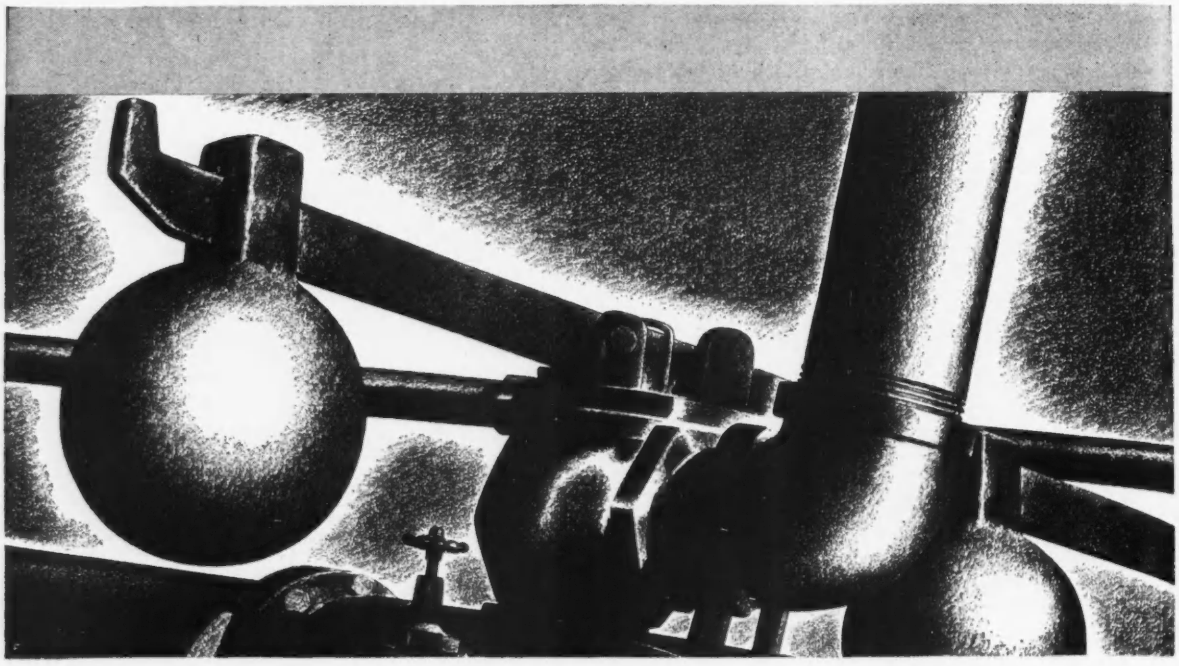
Waste Dealers Observe Silver Jubilee

The three-day convention of the National Association of Waste Materials Dealers, Incorporated, held at the Hotel Astor, New York, from March 14 to 16, wound up with a rousing silver jubilee banquet in celebration of its twenty-fifth year of existence. About 500 persons were present.

The guest speaker was Gabriel Heatter, popular radio commentator, who insisted that business, not politics, should be the leader in reinstating the spirit of courageousness so important in our democracy.

The entertainment started off with a depiction of some outstanding periods in the life of the association, including the year of its organization (1913), a characteristic squad of doughboys during the World War (1918), and a scene portraying a typical waste material dealer after the stock market crash (1930). The year 1938 was of course represented, as well as a visualization of the spirit of the future.

E. J. Keller was chairman of the banquet committee. Charles M. Haskins, 1475 Broadway, New York City, serves as secretary.



BALANCED PRODUCTION THROUGH CHEMICAL PROGRESS

WAXES

FOR IMPROVING PAPER PRODUCTION

Cyanamid offers a special service on Wax Sizes, backed by experienced technical assistance. The two types listed below are produced in several grades to meet diversified requirements. Where unusual conditions are encountered, our staff will be glad to cooperate in developing formulae to suit the need.

ALWAX SIZE—Made in both high and low melting point waxes. Used in the beater to supplement rosin size, it improves the finish, gives a better printing surface, and increases water resistance at low cost. It also serves to improve the folding quality of paper and board. As a surface size, applied in the size tub or at the water boxes of a calender stack, ALWAX SIZE improves the finish and lays fuzz, gives a water-resistant surface, improves the printing surface, and, used in connection with calender color, gives a uniform dyeing.

WAXINE SIZE—Made from a combination of rosin size and wax, this size improves the fold and the printing surface. Due to the absorption of vehicle by the paper, there is less chance of offset. Paper or board sized with WAXINE SIZE has less tendency to change dimensions with changing humidities—and thus gives less mis-register on printing.

American Cyanamid & Chemical Corporation

30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Ohio Section Discusses Drying

Members and friends of the Ohio Section of the Technical Association of the Pulp and Paper Industry met for a dinner meeting at the Hotel Manchester, Middletown, Ohio, Saturday March 19, 1938.

V. F. Waters presided at the meeting due to the absence by illness of H. H. Latimer newly elected chairman of the Ohio Section. A short business session followed the dinner.

Mr. Waters introduced the speaker of the evening. A. E. Montgomery, Western Manager of the J. O. Ross Engineering Company who gave a paper which will be published in the PAPER TRADE JOURNAL, entitled, "The Economic Use of Air in Drying."

The speaker discussed several major types of drying including drying on paper machines, drying in converting operations, and pulp drying. In considering paper machine drying Mr. Montgomery included figures showing an analysis of relative amounts of air and water actually required in good drying operation and pointed out the necessity for ventilation. He discussed hoods, automatic control of saturation of exhaust volume, thermostatic control of supply air and use of economizers as important points in the economical use of air. In converting operations Mr. Montgomery cited that many new installations include the thermostatic and volume control. In this field recirculated air and exhaust air from paper machines also must be considered. Some interesting facts in pulp drying with inclosed high temperature dryers were discussed.

Following the formal talk an informal discussion brought out many interesting questions. J. B. Gough, Mead Corporation, Mr. S. A. Staege, Black Clawson Company, J. W. Harbrecht, vice president of Hinde & Dauch Paper Company and E. G. Drew, J. O. Ross Engineering Company took an active part in the discussion.

Those in Attendance

After the discussion all those present were introduced to the group. Following is a list of the men present:

William Beckett, Edward Lum, Val Friedrich Jr., William Reigers, Harold C. Leighton, John Burnett and Marshall Barker, Beckett Paper Co., Hamilton, Ohio. William H. Boast, James Combie, Richard Holmes, Harry C. Fisher, Stanley Trosset, C. R. Merriman, Robert Haynes, W. A. Oliver, Thage Dahlgren and S. V. Rogers, Gardner Richardson Company, Middletown and Lockland Divisions. Tom O'Flynn, superintendent, Wardlow Thomas Paper Company, Middletown, Ohio. R. H. J. Smith, R. B. Roe and Claude O. Sorg, Sorg Paper Company, Middletown, Ohio. Myron Wittmer, Cheney Pulp and Paper Company, Franklin, Ohio. J. H. Tate, The Howard Paper Company, Urbana, Ohio. K. P. Geohegan, The Aetna Paper Co., Dayton, Ohio.

W. W. Galloway and H. G. Funsett, Hagar Strawboard & Paper Company, Cedarville, Ohio. J. B. Gough, Mead Corporation, Chillicothe, Ohio. A. W. Henrick and Carl D. Roess, Wrenn Paper Company, Middletown, Ohio. Vincent Waters, James F. Rice, T. M. Chemerys and George C. Munro, Champion Paper and Fiber Co., Hamilton, Ohio. Mr. Hanley and E. P. McGenn, The Champion Paper and Fiber Company, Canton, North Carolina. J. W. Harbrecht, H. L. Harbrecht and D. L. Owen, the Hinde and Dauch Paper Co., Sandusky, Ohio. H. H. Harrison, Charles Rybolt and John E. Burdsall, The Crystal Tissue Co., Middletown, Ohio. Donald Appleton and H. P. Petzold, The Oxford Miami Paper Co., West Carrollton, Ohio. Ellis Gay, Harding Jones Paper Company, Middletown, Ohio.

O. P. Gephart and Phillip S. Cade, The Miamisburg Paper Co., Miamisburg, Ohio. T. H. Latimer and Stephen A. Staege, The Black-Clawson Co., Hamilton, Ohio. C. N. Crawford, Shartle Brothers Machinery Co., Middletown, Ohio. P. E. Howard, Bevis Machine Co., Middletown, Ohio. Henry Waffenschmidt, National Aniline and Chemical Co.; Robert R. Weber, Mathieson Alkali Works; E. G. Drew (Pacific Coast Division) and A. E. Montgomery (Western Manager), J. O. Ross Engineering Company.

Visitors: Henry Seaman, Canton, N. C.

Want Pulp Mill for Saskatchewan

VANCOUVER, B. C., March 19, 1938—Continuation of the policy of shipment of pulpwood out of Saskatchewan so long as over-ripe timber was in danger of deterioration was forecast in the Legislature recently by Hon. W. F. Kerr, Minister of Natural Resources.

He indicated that every effort was being exerted towards getting the establishment of a pulp mill in the northern forest area, but intimated that an outlay of upwards of $2,500,000 was necessary and that private control would consider such outlay only if a long term lease were given for timber berths in the north.

He held out no hope of the immediate establishment of such a mill, but said it was the goal for which the department aimed.

New England TAPPI Discusses Color

The New England Section of the Technical Association of the Pulp and Paper Industry met at the Roger Smith Hotel, Holyoke, Massachusetts, Friday evening, March 18, 1938. John B. Calkin, of the Dennison Manufacturing Company, presided as chairman.

The first speaker on the program was Benjamin Mayo, of the Imperial Color and Chemical Company, Glens Falls, N. Y., who talked on "Color and Its Application to Paper." This paper will be published soon in the PAPER TRADE JOURNAL.

The second speaker was H. N. Lee, of Arthur D. Little, Inc., Cambridge, Massachusetts, who spoke on "Paper Diagnosis" and showed a number of interesting slides showing the appearance of fibres in sheets when treated with various materials. This paper will also be published.

The next meeting will be held at Worcester, Massachusetts, on April 22nd. John B. Tuttle, of the Standard Oil Company of New Jersey, will discuss the uses of petroleum in paper. Wm. F. Talbot, of the Dennison Manufacturing Company, Framingham, Massachusetts, will discuss "Technical Advance and International Diplomacy."

Those in Attendance

Among those present were the following:

F. H. Lovenberg, George Mann & Co., Providence, R. I.; L. W. Crouse, Penick & Ford, Springfield, Mass.; Helen W. Kiely, American Writing Paper Corporation, Holyoke, Mass.; A. L. Perry, Krebs Pigment Company, Boston, Mass.; Vernon Woodside, Mathieson Alkali Works, New York City; W. J. Ford, West Dudley Paper Company, W. Dudley, Mass.; J. B. Calkin, Dennison Manufacturing Company, Framingham, Mass.; Benjamin Mays, Imperial Color Corporation, Boston, Mass.; R. H. Doughty, Fitchburg Paper Company, Fitchburg, Mass.; D. J. Macdonald, Arthur D. Little, Inc., Cambridge, Mass.; H. A. Otto, American Tissue Mills, So. Hadley, Mass.; R. G. Vaeth, Robert Gair Company, New London, Conn.; L. N. Smith, American Tissue Mills, So. Hadley, Mass.; G. A. Peterson, Rice, Barton & Fales, Worcester, Mass.; Robert Mannheim, Mathieson Alkali Works, Providence, R. I.; Frank Nyborn, Bird & Son, Inc., E. Walpole, Mass.; Lena E. Kelley, American Writing Paper Corporation, Holyoke, Mass.; A. F. Gilmore, Bird & Son, Inc., E. Walpole, Mass.; J. E. Doyle American, American Writing Paper Corporation, Holyoke, Mass.; Clarence Damon, R. M. Altieri and R. J. Proctor, Fitchburg Paper Co., Fitchburg, Mass.; Donald Young, American Writing Paper Corporation, Holyoke, Mass.; Carroll Homan, Bird & Son, Inc., E. Walpole, Mass.; T. W. Schneider, Hampden Color and Chem. Company, Springfield, Mass.; R. D. McCarron, Stein, Hall & Co., Inc., New York City; R. K. Baker, Hampden Color and Chemical Company, Springfield, Mass.; J. Wesley Joslyn, The Sandy Hill Iron and Brass Works, Hudson Falls, N. Y.; L. K. Burnett, Robert Gair Company, New London, Conn.; W. J. Burke, General Dyestuff Corporation, Providence, R. I.; C. L. Reece, Whiting Paper Company, Holyoke, Mass.; F. C. Clark, The Pond Company, Seymour, Conn.; J. T. Leecock and Francis Gillispie, American Writing Paper Corporation, Holyoke, Mass.; Miss R. M. Taft, Mathieson Alkali Works, Providence, R. I.; W. G. Russell, American Writing Paper Corporation, Holyoke, Mass.; H. N. Lee, Arthur D. Little, Inc., Cambridge, Mass.; D. K. Bartlett, West Dudley Paper Company, W. Dudley, Mass.; Charles O'Neill, Castle-Overton Company, Holyoke, Mass.; Charles Backus and James Fitzgerald, Collins Mfg. Co., N. Wilbraham, Mass.; Andrew Jackson, American Writing Paper Corporation, Holyoke, Mass.; William Anderson, Stevens Paper Company, Westfield, Mass.; Charles Davidson, Whiting Paper Company, Holyoke, Mass.; John P. Kennedy and R. H. Pattison, American Writing Paper Corporation, Holyoke, Mass.; R. G. Macdonald, Secretary Technical Association of the Pulp and Paper Industry.

Empire State TAPPI to Meet

The Empire State Section of the Technical Association of the Pulp and Paper Industry will meet at Syracuse, N. Y., Saturday, April 2, 1938.

There will be a luncheon at 1:00 P.M. in the North Room of the College of Home Economics, Slocum Hall, Syracuse University.

At 2:30 P.M., in the auditorium of Marshall Hall, there will be a symposium of paper sizing with the following papers:

1. "Review of the Theory and Practices of Sizing Papers with Rosin" by M. J. Maguire, Paper Makers Chemical Dept., Hercules Powder Co.
2. "Progress Report on the Use of Sodium Aluminate as a Size Precipitating Agent" by L. J. Loutrel, Jr., Monsanto Chemical Company.
3. "The Use of Enzyme Converted Starch in Paper Manufacture" by J. J. Thomas, Rohm & Haas Company.

A round table discussion will follow the presentation of papers.

At 6:30 P.M. there will be a dinner in the Ball Room, University Club of Syracuse, following which H. N. Lee of Arthur D. Little, Inc., Cambridge, Massachusetts, will present an illustrated lecture on "Microscopical Diagnosis of Paper Making Problems".

The charter of the Section will be presented by Frederic C. Clark, President of the Technical Association.

Anyone desiring to be present will be welcome.

Union Bag Discontinues Tax Suit

HUDSON FALLS, N. Y., March 21, 1938.—Village officials here have been informed that the Union Bag and Paper Company has discontinued its tax suits against Hudson Falls and the Town of Kingsbury. Trial of the action was held last summer before Supreme Court Judge Rogers and a decision in favor of the village was followed by an appeal by the company. The corporation sought a substantial reduction in tax assessments against its properties in this village. Village authorities have also been informed by paper company officials that the concern will use every effort to provide as much employment as possible for the employees who are now on the payrolls at the local plants.

Disc Refiner Design and Application*

By D. Manson Sutherland, Jr.[1]

Abstract

Further data on the design and performance of disc refiners is given:

Commercial operations of disc refiners are given and advantages of preprocessing or base refining are suggested.

In 1937 *(1)* the author discussed data on the principles of design and operation of discs for refining. Additional data can now be given based largely upon commercial operations during the past year. Since this data has been obtained from disc refiners operating under commercial conditions at large capacities, it is not possible to give full details of every test in this paper. Particular tests are abstracted in some instances and average results in other cases are quoted.

Effect of Gap Between Discs

In 1937 *(1)* the effect of gap was given upon strength development of sulphite pulp at capacities ranging from 21 to 28 tons per day. The results given below at capacities in excess of 60 tons per day confirm that considerable loss of refining occurs when the gap is increased 0.002 to 0.004 inch. In each example the mullen development decreases and the tear increases as the gap is widened. These tests were made on similar sulphite under commercial conditions and were checked as accurately as possible.

EFFECT OF GAP AT LARGE CAPACITIES

EXAMPLE No. 1			
Setting (inches)	0.001	0.003	0.005
Power (h.p.-hr. per ton)	32.9	44.4	38.1
Capacity (tons per 24 hr.)	116.8	82.5	80.6
Consistency (per cent)	4.18	3.94	3.84
Mullen increase (per cent)	+51.2	+44.3	+38.5
Tear loss (per cent)	—22.5	—20.8	—15.1
Freeness drop (cc. Green)	112.	104	76
EXAMPLE No. 2			
Setting (inches)	0.001	0.003	0.005
Power (h.p.-hr. per ton)	47.1	40.7	37.6
Capacity (tons per 24 hrs.)	58.7	60.3	57.8
Consistency (per cent)	3.16	3.23	3.11
Mullen increase (per cent)	+44.7	+40.2	+25.9
Tear loss (per cent)	—17.9	—12.7	—8.6
Freeness drop (cc. Green)	96	82	67

The effect of gap is known to be important in all types of beaters and refiners but it is not generally realized that a change of 0.002 inch can affect the results so materially. Possibly the fact that the time factor in a beater is so long may have been responsible for failure to realize the effect of minor changes in gap but it is quickly and effectively brought to the attention of anyone testing the change in stuff properties made in one pass between refining surfaces.

Refining Action of Discs

During commercial operations in a large mill it has been necessary to refine different grades of sulphite with the same refining discs. The gap was changed at times, approximately 0.003 inch, by the operators.

The average results are as follows:—

	West Coast Sulphite	Swedish Sulphite	German Sulphite
Capacity (tons per day)	88.3	107.0	98.0
Power Consumption (h.p.-hr. per ton)	54.6	44.7	39.0
Freeness drop (cc. Green)	102.0	83.5	68.0
Mullen increase (per cent)	57.7	53.6	52.7
Tear decrease (per cent)	20.9	18.8	10.0

It is generally thought that sulphite pulps from such widely distributed sources would require much different processing in beaters and jordans in order to obtain uniform sheet properties, but it seems to be a simple matter for discs when slight adjustment of gap is made. Owing to the differences in wood and cooking technique used in producing the pulps referred to, it is impossible to develop stuff and sheet properties that are identical but the results shown are close enough to obtain uniform commercial results on the paper machine.

Design of Discs

When designing discs for refining various grades of sulphite, sulphate, and soda pulps in any one mill, it is important to correlate all factors such as impact-inches and area of disc surface so that the discs will operate efficiently on the most difficult grade. Assuming that the discs are designed for efficient refining action on soda pulp then the same discs will be efficient on the longer sulphite and sulphate fibers when operated with an increased gap. But discs designed for sulphite and sulphate will not be efficient on soda pulp because the incoming fiber size of the latter is much smaller. It has also been found that the refining action of groundwood in beaters and jordans is inefficient and this can be attributed to the design of tackle used. The average fiber length in groundwood is short, consequently fibrages are not formed on the edges of bars to the same extent as with sulphite and sulphate pulps.

Impact-Inches

Discs have been operating on sulphate pulp for liners for more than one year with variations in impact inches, width of bars, angle of bars, and width and depth of grooves (cells).

The capacity of one set of discs is approximately 100 tons per day at 4 per cent consistency. When using 500,000 impact-inches per pound of pulp the freeness drop was approximately 50 cc. Green freeness. When the impact-inches were increased to 1,750,000 per pound of pulp produced, 80 cc. freeness was obtained. The low impact-inches necessitated a close gap of 0.002 inch but the high impact-inch discs were operated at 0.005 to 0.008 inch. The power consumed with low impact inches was 3.75 h.p. per ton per day and with the higher impact inches, 3 h.p. per ton per day.

Effect of Varying Discharge Orifices

The author, *(1)* showed one method of controlling orifices which govern the capacity through the discs. Commercial tests have been made on a single-rota-

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 21-24, 1938.

[1] Member TAPPI President, Sutherland Refiner Corporation, Trenton, N. J.

tion refiner equipped with constant and insert orifices on 42 inch diameter discs operating at 360 r.p.m. on slushed sulphite. No changes were made in discs or operating conditions other than increasing the discharge orifice area from 2.3 to 3.5 sq. in. The tests were made over a period of several days with each amount of orifice area and the average results are as follows:—

Orifice Area	2.3 sq. in.	3.5 sq. in.
Setting between discs (inches)	0.001	0.001
Power (h.p.-hr. per ton)	45.4	46.7
Capacity (tons per 24 hr.)	47.3	80.6
Freeness drop (cc. Green)	64.5	102
Mullen increase (per cent)	+37.25	+48.4
Tear decrease (per cent)	—10.65	—21.7

The results obtained by this test deserve careful consideration as the increase of discharge orifice area by approximately 54 per cent gave an increase in capacity of approximately 70 per cent with more refining action as shown by mullen increase and greater freeness drop. Pending further investigation of this phenomenon, it is thought that increased turbulence due to higher capacity produced the improved results and further commercial tests since then confirm this view. However, it will be necessary to make additional studies of the effect of orifice area in relation to capacity and refining action before definite conclusions can be drawn.

The use of orifices to control capacity of discs is a new and important feature. The discharge from a jordan is controlled by a valve in the discharge line which provides a degree of regulation by the operator. It is now possible to obtain the same degree of control with discs provided with orifices.

External Orifice Control

The method of adjusting orifices must be such that the area can be regulated while the disc refiner is in operation. In regular practice the orifices are designated as constant, inserts, and external. The constant orifices are machined into the check ring and can only be changed by removing the discs and remachining the orifices. The inserts are removable but, in order to do so, it is necessary to shut down the refiner. The external orifice control permits the operator to adjust capacity while this refiner is in operation.

In Fig. 1, the constant orifices are distributed equally around the periphery of the discs and varv in size and number according to the capacity required.

The insert orifices may be a number of slots 1 inch or more in width and ¼ inch deep and are used as an addition to the constant orifices. The externally controlled orifices are milled out to a radius and are also an addition to constant and insert orifices.

Fig. 2 shows a front view of a refining disc and an externally operated, tapered wheel as well as a cross section showing the rotating and stationary head and the method of opening or closing the orifices

Fig. 1.

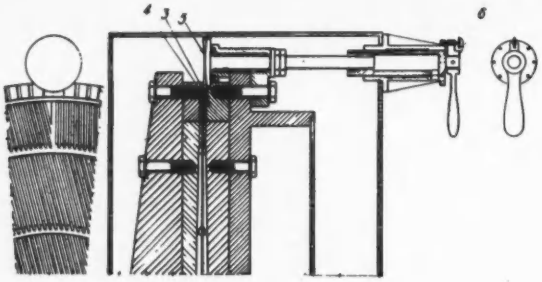


Fig. 2.

externally. The non-rotating disc is marked (4); the orifice is marked (3); and the tapered wheel is marked (5). By means of the lever (6) the tapered wheel (5) can be turned so that the orifice can be fully closed, or opened, or partially opened as the operation may require. Externally controlled orifices are only placed on the stationary head and it has been found in practice that this method of controlling capacity is effective.

Fig. 3, shows one method of placing inserts into insert orifices. Such inserts can be varied in thickness to increase the orifice discharge, or one or more may be eliminated entirely, depending upon the kind of pulp that is being refined and the degree of refining action that is required.

Fig. 4 is a picture of the externally controlled orifices on the non-rotating head with cover removed.

Fig. 5 shows the externally controlled orifices with cover in place and inspection manhole open.

Comparison of Various Refining Tackle

Since this paper deals mainly with discs it is necessary to consider the fundamental reasons for selecting discs for refining as compared with cones as in a jordan and cylinders as in beater rolls. In this and preceding papers, it has been shown that the necessary bars, grooves, and refining surface area used in beaters and jordans can be incorporated in the surface of discs. The control of pressure, permissible variations in consistency, variations in gap between refining surfaces, and control of capacity is now obtainable as readily with discs as with beaters and jordans.

The advantages, when properly designed, of discs, in comparison with cones and cylinders lie in the power savings that can be effected, in control and uniformity of stuff properties, and in more effective use of impact inches.

Power Savings

Without going into formulae to show power consumed, it is obvious that the least power consumed

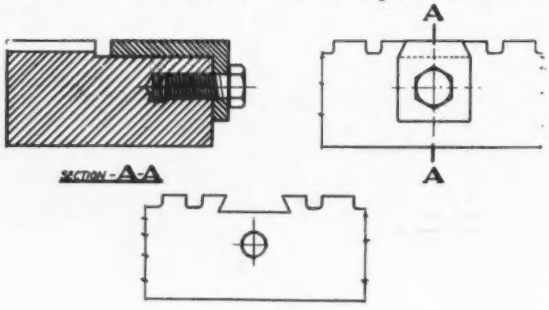


Fig. 3.

is at the center of the driving shaft. The average jordan cone has a mean diameter of approximately 25 inches, consequently the refining action takes place at this diameter and in order to compensate for small diameter and therefore low impact and contact inches, it is usual to operate at speeds ranging from 360 to 450 r.p.m. or 1900 to 2400 f.p.m. Higher speeds are used on small jordans and some modified types of jordans but it has been found that the power consumption was higher for a given capacity and degree of refining.

In beaters the rolls may be 60 inches in diameter and the speed is reduced accordingly. The impact and contact inches are low in comparison with the number used in a well designed disc refiner. A beater roll has only a small fraction of its total contact area in contact with the bedplate thus differing in this respect with jordans and discs.

A comparison of impact and contact inches in different types of refiners was published by the author in 1936 (*2*) showing higher figures for disc refiners then commonly known as attrition mills.

In a disc refiner the refining action takes place on the side of the disc instead of its periphery and when properly designed the refining action commences at a diameter of 10 inches and finishes at a diameter of 42 or 48 inches. As far as the author knows there is no published data for determining the power consumed by one rotating and one stationary disc, or between the plug and shell of a jordan, but engineering experience generally shows that the power goes up as the cube of the speed and the fifth power of the diameter. Hitherto the limitations on speed and diameter of beater rolls and jordan plugs has been governed by rules of safety necessitated by wooden fillings and the effect of speed and diameter upon power consumption has apparently not been given sufficient attention.

In a well designed disc refiner the refining discs are made of stainless steel and could be operated at speeds up to 12,000 f.p.m. if it were advisable to do so, but since the power consumed increases as the

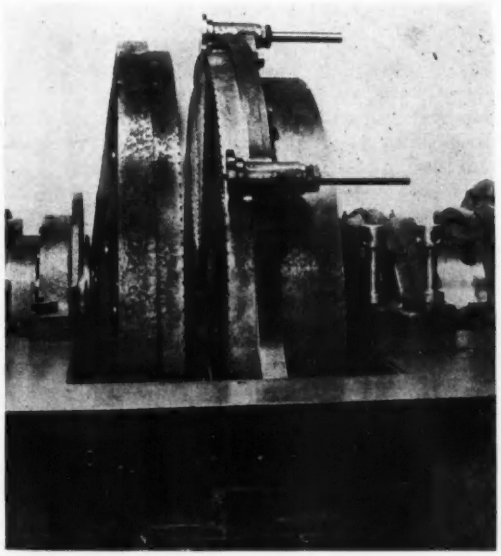


FIG. 4.

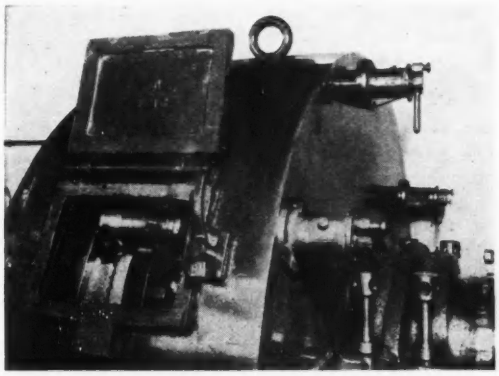


FIG. 5.

cube of the speed, it is obvious that high speeds must be avoided.

Again large diameters are even more expensive unless the speed is reduced so as to avoid the penalty of the fifth power increment. Modern discs of 48 inch diameter cannot be operated efficiently beyond 450 r.p.m. Studies now underway indicate slower speeds. Eventually it may be advisable to increase the diameter beyond 48 inches and lower the speed accordingly. In addition to the lack of data governing the power consumed in a disc rotating against a stationary disc, students of refiners will realize that data governing the refining action on the fibres is also lacking. However, it is safe to proceed with the development of refiners at low speeds and to obtain a sufficient impact- and contact-inch by utilizing the refining surfaces to the best advantage. This can be done with discs.

Control and Uniformity of Stuff Properties

Since refining discs are parallel, it is comparatively easy to machine and grind them accurately within 0.002 inch. The best designers utilize special stainless steel castings which can be machined but are very tough, do not corrode, and withstand abrasion. In this connection it can be shown that discs operating at the rate of 100 tons per day on southern sulphate for liners do not show any appreciable wear after one year of service. During this period approximately 800,000 tons of pulp and water have passed between the discs. Long life of tackle in any refiner is necessary to insure control and uniformity of stuff properties as at least one variable now occurring with ordinary steel tackle is avoided. Further long life of discs is most important in order to keep the proper relation of bars to grooves which control the capacity and stuff properties.

Temperature Rise

The improvement in the design of discs during the last three years is perhaps best illustrated by the slight rise in the temperature for a given freeness drop that is now obtained as compared with temperature rise obtained previously. It has been shown (*3*) that a freeness drop of 130 cc. (Green) on sulphite required a temperature rise of 27 deg. F.

Currently it is possible to obtain a freeness drop of 134 cc. Green on similar sulphite with only 2 deg. F. rise in stuff temperature. Again, a freeness drop of 144 cc. Green is obtained with only 3.5 deg. F. rise.

The lower temperature rise obtained today is solely

due to the design of discs and mainly to efficient use of impact and contact-inches, with consequent large power savings.

Commercial Installation

In Techn. Assoc'n Papers XX, June 1937, Page 194, a cross section of a modern single-rotation disc refiner was shown. Since then some modifications have been effected but in general the design is the same as commercial disc refiners now in operation for over two years. The real test of any refiner is in commercial production, consequently two illustrations are given.

Fig. 6 shows two 48 inch refiners operating on high yield sulphite in Canada. Each currently produces 80 tons per day but the capacity can be increased to 100 tons each when required.

Fig. 7 shows two 42 inch refiners connected to one 600 h.p. motor and operating on southern kraft for liner. Each refiner produces approximately 100 tons per day.

Both installations operate without the assistance of beaters or any other type of refiner. The large capacity of this disc refiner has eliminated the use of many smaller refiners which were previously used. It has been found that the stuff properties produced over long periods are remarkably uniform with comparatively less attention being required.

Base Refiners

Some mills have given a great deal of study to preprocessing of their pulps before delivering same to beaters and jordans. In connection with the development of disc refiners it has been the practice to speak of preprocessing as base refining. In a book mill it has been common to beat the sulphite, soda, and broke together, but when base refining is used, the sulphite is refined to the desired stuff properties separately. The soda pulp is also refined separately to its most desirable stuff properties. The broke

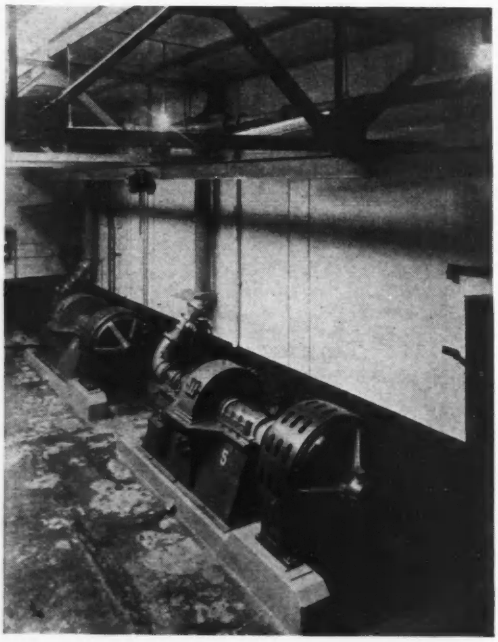


FIG. 6.

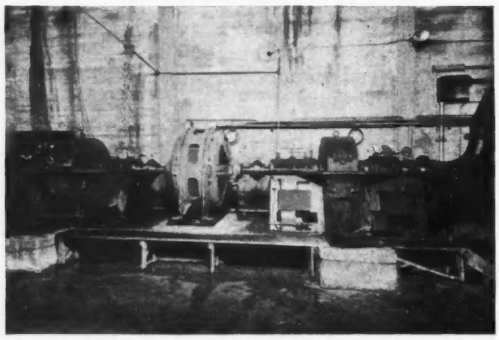


FIG. 7.

already refined requires only de-fibering without further slowing the drainage rate. These separate stuffs are then blended together in a mixer of some suitable type and discharged to the machine chest. The stuff is then passed through another refiner to give the necessary final refining action before going to the wire. The use of high capacity refiners for base refining will eliminate the use of the large number of beaters and refiners now required to furnish the average paper machine. One commercial installation now in use producing 550 tons per day comprises six disc refiners (base) in the pulp mill and eight disc refiners in the paper mill. There are four paper machines each using two refiners. No other beating or refining equipment is used in this mill.

Further studies of base refining are underway and it is hoped that further progress in this direction can be made at a later date.

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(2) Bidwell, G. Lamont, Jr., and Sutherland, D. Manson, Jr., "Computation of Impacts and Contact Inches in Beaters and Refiners". *Tech Assoc. Papers*, XIX: 163 (June 1936).
(3) *Tech. Assoc. Papers*, XVII: 202 (Table IV) (June 1934).

Paper Finishing Developments in 1937*

By A. B. Clark[1]

The year 1937 witnessed a sincere effort to dress up the appearance of all packages, especially the counter rolls.

Increased use of gummed tape over rope, more shipping skids, piece work and wage incentive plans helped speed the handling of finished paper.

There was a marked increase in the use of private designs of embossed and printed papers for box covers and bags.

Intaglio printing, surface printing, waxing and oil treating at the mill were much in evidence.

The ratio of rolls over sheets increased somewhat.

Closer inspection of paper shipments and greater effort to cut down waste through more secure stowing of product prevailed. Helpful booklets were distributed by many railroads showing bracing methods.

Some contemplated improvements were not carried through to completion due to the business recession.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 21-24, 1938.
[1] Superintendent of Finishing, Racquette River Paper Co., Potsdam, N. Y. Chairman, TAPPI Finishing Committee.

Annual Progress Report of TAPPI Paper Testing Committee, 1937-1938*

By B. W. Scribner, Chairman[1]

Organization

The more important changes in the organization for the development of TAPPI methods are the appointment of L. S. Reid, Metropolitan Life Insurance Company, as Chairman of the Subcommittee on Microscopic Testing, R. W. McKinley, as Chairman of the Subcommittee on Physical Testing, and reorganization of the programs and personnel of these Subcommittees. Several changes in the programs and personnel of other subcommittees were also made.

The Paper Testing Committee now comprises 19 members, and cooperating with them are 38 additional members of subcommittees, making a total of 57 engaged in the development work. They are representative of manufacturing, consuming, and general interests.

Status of Projects: Permeability

The method of Cobb and Lowe for testing the water absorptiveness of non-bibulous papers and paperboards was completed by P. W. Codwise's subcommittee and has been adopted as a tentative standard. The present work of this subcommittee comprises development of methods for testing surface quality as related to writing. The method for grease resistance proposed by the Subcommittee dealing with this project, H. L. Mellen, Chairman, was acted upon favorably by the main committee, but it is being withheld pending cooperative testing by subcommittee members to find whether the Cobb and Lowe method mentioned above is more suitable for the purpose. Identical samples of grease resistant papers have been distributed for the purpose. After consideration of the information developed at the symposium on testing water vapor permeability, held at the last Annual meeting, and that resulting from F. T. Carson's extensive search of the related literature, a tentative method was formulated and distributed to subcommittee members for cooperative trial, by the Chairman, G. J. Brabender. Identical samples of wet-waxed, dry-waxed, and glassine papers, moistureproof and non-moistureproof Cellophane, cellulose acetate sheeting, and Pliofilm, a rubber product, are being used for the testing. A revision of the present method for water resistance is being written to include the ground-glass test for water resistance of waterproofed papers, as an official method.

Printing Properties

The proposed methods for printing smoothness and printing ink permeation have been referred back to R. H. Simmons' subcommittee for further investigation, which is in progress. This development work is complicated by the various instruments and procedures in use which apparently do not give strictly comparable values, and it is difficult to find which of them are the best criterion of printing quality. The further work also includes development of a standard wax pick-test for adhesion of mineral coating.

Microscopy

A bibliography of "Microscopy of Paper" by J. B. Calkin, formerly Chairman of the Committee on Microscopic Testing, was published in booklet form. This committee project was financed by the Association. Under the direction of the present Chairman, the subcommittee completed a revision of the method for fiber composition of paper, and a suggested method for identification of specks and spots. These are being considered by the Standards Committee. The further program comprises study of proposed weight factors to find whether they are valid for fibers as they occur in paper, fiber length, and round-robin tests of the Graff "C" stain.

Physical, General

R. W. McKinley, Chairman of the Subcommittee on Physical Testing, prepared another proposed revision of the method for tensile breaking strength, and this is being considered by the members of the subcommittee. Revision of the method for bursting strength and development of a method for stretch, and a method for wet tensile strength is in progress. A method and apparatus developed by C. G. Weber and M. N. V. Geib for measurement of relative hygrometric expansivity of paper is being used as a basis for a proposed TAPPI method. A committee vote on changing the status of the method for dirt to a tentative method resulted favorably, but it is being held for some suggested changes.

Chemical

Considerable progress was made by the Subcommittee on Chemical methods, P. F. Wehmer, Chairman. The determination of reducible sulphur, silver staining, starch and resin were investigated. A resulting revised method for starch, a revised method for reducible sulphur, and a method for silver staining were completed and are being acted upon by the Standards Committee. A proposed revision of the method for resin, based largely on investigations, reported by E. Sutermeister and W. V. Torrey, and by H. F. Launer, should be ready for committee vote shortly.

R. C. Griffin and the writer collaborated in preparation of revisions of the methods for copper number, mineral coating, mineral filler, ash, and total acidity. The first four have been submitted for the consideration of the Standards Committee. The main change in the method for copper number was to extend its scope to all papers excepting those containing zinc sulphide pigments. The methods for mineral coating and filler were combined. The important changes in the method for total acidity are inclusion of total alkalinity and requirement of one extraction instead of three. S. Kohler, one of the proponents

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 21-24, 1938.

[1] Chief, Paper Section, National Bureau of Standards.

of the method on which the present TAPPI method is based, has now found that one extraction is satisfactory for the purpose. The revised method will shortly be submitted for Committee consideration.

Improved procedures for alpha, beta, and gamma cellulose, pentosans, and pH have been developed by H. F. Launer, and they will be forwarded for subcommittee investigation in the near future.

Summary

The Association adopted one new tentative standard, and changed the status of two tentative standards to official standards. The total number of TAPPI paper testing methods is now 41. Seven revisions and one new method were completed for the consideration of the Standards Committee. The number of projects actively in progress is 21.

General

The Chairman of the Committee, with the collaboration of F. T. Carson, completed a revision of the paper testing section of Vol. 5 of the TAPPI textbooks "Manufacture of Pulp and Paper." The advice of R. C. Griffin and T. L. Crossley in this undertaking was particularly helpful. Contact with the American Society for Testing Materials developments in paper testing has been maintained, and improved coordination of the work of the TAPPI Paper Testing Committee and that of the Paper Testing Committee of the Technical Section, Paper Makers' Association of Great Britain and Ireland has been established.

Stock Level and Pressure—Recording, Indicating and Control*

By A. H. Stanton[1]

Abstract

A review and comparison of available equipment for recording, indicating and controlling stock level and pressure. A discussion of the characteristics affecting design of equipment. An outline of typical control applications to provide operating economy and lower installation cost.

At numerous points between the initial stages and the final stage on the wire, it is desirable to know the condition of stock as to level and pressure. It is our purpose to generally review available types of equipment for providing a record or an indication of these conditions.

We shall supplement this review with a brief outline of the possibilities for the actual control of these factors which in some instances make possible definite economies in stock handling as well as simplifying some production problems.

Stock Characteristics Affecting Design of Equipment

The characteristics of stock impose a peculiar set of requirements on the design of a recording, indicating or control element. The most important are:

(a) The element must be free from plugging by the fibers or we have loss of information and time and such high maintenance that the measurement becomes impractical.

(b) Materials in one instance must be acid resisting and in another, resistant to caustic.

(c) Information must be provided at a point either above or below the tank or pipe line, and often at some distance from the vessel. The element must be flexible in meeting these conditions and therefore, measurement is based upon the fact that the pressure at any point in an open tank or body of liquid is a measurement of the height of liquid above that point.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 21-24, 1938.

[1] Manager Pulp and Paper Sales Dept., Mason-Neilan Regulator Co., Boston, Mass.

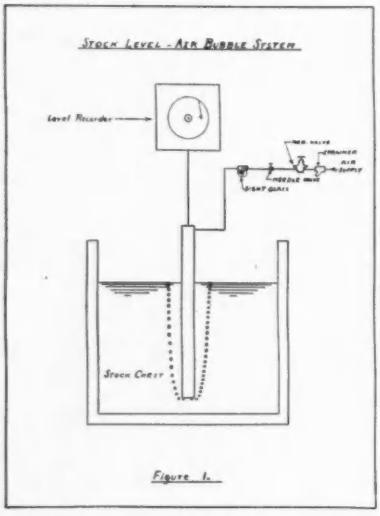


Figure 1.

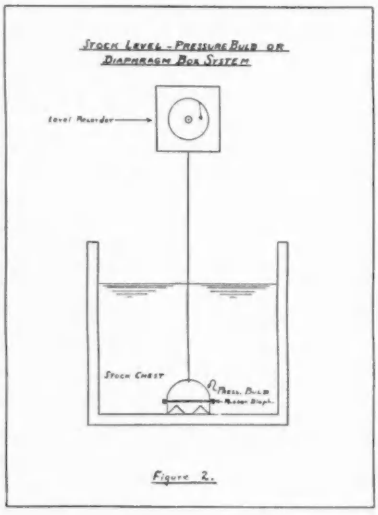


Figure 2.

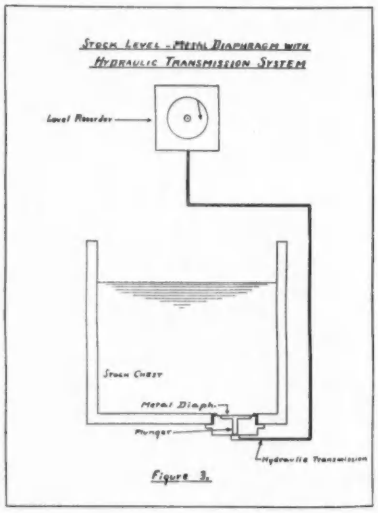


Figure 3.

(d) The actual temperature of stock must not influence the accuracy of the level or pressure indication.

(e) The abrasive effect of stock too must be considered.

METHOD I—THE AIR BUBBLE SYSTEM

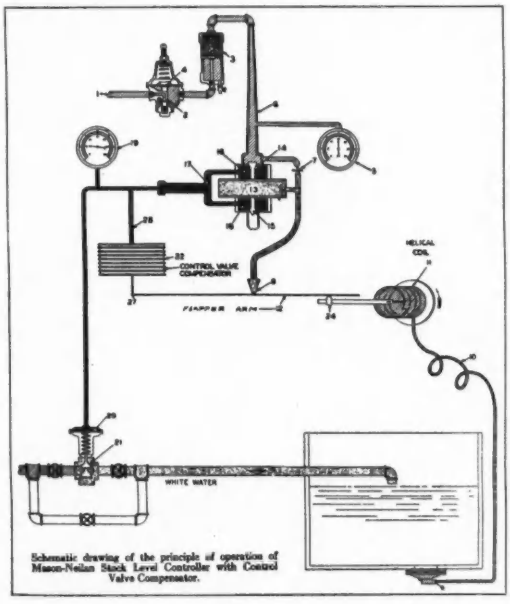
The air bubble system (Fig. 1) meets the above requirements and is well known throughout the industry. It may not be generally appreciated that this system permits recording or indicating with reasonable accuracy at low ranges of level or pressure, measured in inches of water, at relatively low initial cost. It is, of course, equally workable at higher ranges to be measured in feet or pounds. In this system, a bubble sight glass is of value and assistance in correctly setting the proper air flow, particularly where stock chests are deep and agitated and the bubbles are difficult to detect on the surface. The air bubble must be continuous or the system becomes inoperative and the air pipe plugs. Air cost should be considered depending on the number of units and the installation. If we are dealing with a book sized stock or a stock where a lot of colloids are present even such a small quantity of air as is bubbled in may prove detrimental.

METHOD II—THE PRESSURE BULB OR RUBBER DIAPHRAGM BOX SYSTEM

This system (Fig. 2) is also well known and not only meets the initial requirements but eliminates continuous air consumption and also any detrimental effect on stock having a lot of colloids present. Because of the greater displacement of the rubber diaphragm, its best application for reasonable accuracy is at the higher ranges. The initial unit cost is about the same or slightly more than the air bubble system.

METHOD III—THE METAL DIAPHRAGM WITH HYDRAULIC TRANSMISSION SYSTEM

In this system (Fig. 3), the metal diaphragm (stainless steel or plain steel) is in contact with the stock. The movement of the diaphragm, created by a slight change in level or pressure, is transmitted by



Schematic drawing of the principle of operation of Mason-Neilan Stock Level Controller with Control Valve Compensator.

FIG. 4.
Diagrammatic Sketch of Mason-Neilan Stock Level Controller

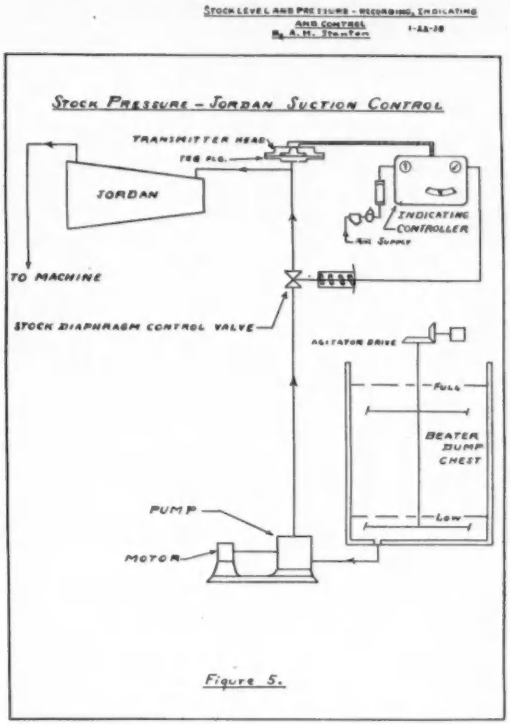


FIG. 5.

a small plunger so as to vary the pressure in the sealed hydraulic system causing rotation of the helical coil which creates the record or indication. The level or pressure change is transmitted by hydraulic means to the receiver as compared with pneumatic transmission in Methods I and II. In addition to conforming with the original requirements, there is embodied in this unit the essential features of long life with all calibration and settings made when assembled by the manufacturer. The minimum range for this unit is 0 to 60 inches of water and is available in higher ranges in feet or pounds. The same comparison made under the pressure bulb type with the air bubble type holds for this system.

Ambient effects on the hydraulic system are compensated for at room temperatures as they may vary throughout the year, but the system is not designed for installation on an outdoor tank with the recorder or indicator indoors.

Although the diaphragm size is large, its total movement for full range is small and within the limits of metal fatigue. By reason of design, diaphragm displacement is not a factor.

The Control System

The motion imparted to the pen or indicating pointer by any one of the three systems described may also be utilized to cause motion of a flapper arm (Fig. 4). Thus an auxiliary operating air pressure may be varied so as to properly position a diaphragm control valve with the result that a desired predetermined stock level or stock pipe line pressure may be controlled.

In this system we have combined a record or indication with the control; means for quickly and simply changing the control point; and the power necessary to operate the valve regardless of size. In passing let

us note that these three advantages are not to be found in a float type of control.

Control Applications

Overflow stock chests are widely used as a means for controlling a constant pressure of stock on pumps, jordans and the like. Under this set up, for example, 100 per cent may be handled by a pump with only 30 per cent passed on to the jordan, the 70 per cent being returned to the pump suction and subsequently rehandled. If a control be applied, depending on pump construction and the manufacturer's recommendation, only the 30 per cent need be handled with the return being eliminated. Under these conditions while the pump would be operating at a higher head, the total power input to it should be less. Thus we have a reduction in operating cost and a lower installation expense since overflow boxes and return piping is unnecessary.

Another sometimes very serious problem is that of introducing overflow stock into the main stream so as not to affect consistency or rejordan stock already in its final form. Controls applied under these conditions eliminate the problem.

Jordan Suction Pressure Control

This and the following applications are not to be considered as control system recommendations universally applicable. These are intended to be provocative of thought in applying control so as to simplify individual problems. In Fig. 5, since the level or head in the beater dump chest drops as the stock is pumped out, the discharge head on the pump or the suction head on the jordan engine will vary accordingly. This variation, of course, is reflected in the jordan discharge pressure and from either a process standpoint or a power standpoint it may be serious. The application of control, set to maintain constant predetermined pressure on the jordan inlet by throttling against the pump discharge will preserve uniform jordan pressures with the advantages indicated above.

Jordan Discharge Pressure

In Fig. 6, the control is applied to maintain a constant head on a stuff box gate regardless of the position of the gate, permitting the stock to flow through to the wire. The chief advantage of such an application is the elimination of rehandling the stock.

Head Box Level Control

In Fig. 7, we are concerned with the maintenance of a uniform level in the box to eliminate the effect

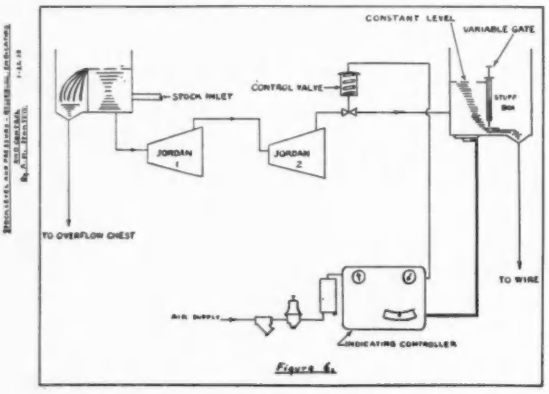


FIG. 6.

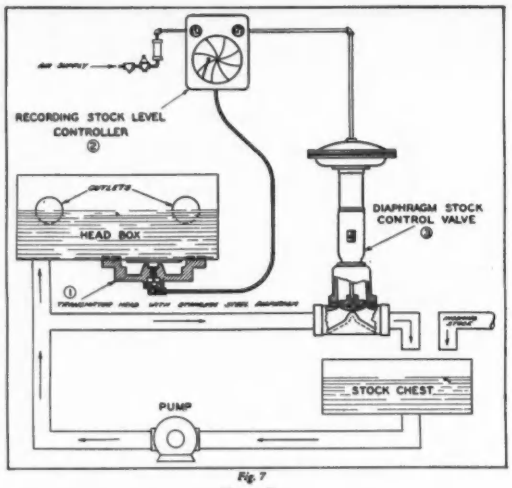


FIG. 7.

Installation Sketch of Head Box Automatic Stock Level Control Transmitter Mounted on the Bottom of the Box.

of variations in the pump discharge pressure which are in turn created by running the stock out of the suction chest. In this instance while there is a return of the stock to the suction chest, it should be observed that the pump discharge pressure and level in the box will tend to remain at a constant value.

Couch Pit Level Control

In normal operation the trim falls into the couch pit with the shower water and after sufficient trim has fallen to overcome frictional resistance on the wall of the couch pit, the stock will enter the pump in slugs and be passed on. By maintaining a fairly uniform level (Fig. 8) in the couch pit and recirculating as shown the stock trim and shower water is uniformly agitated. Then too the stock may be returned directly to the machine chest ahead of the wire and its consistency regulated with little difficulty thus eliminating considerable rehandling.

Conclusion

With the considerations outlined above in mind, the best possible selection for securing a record or an indication or control can be made to accomplish the solution of a particular problem.

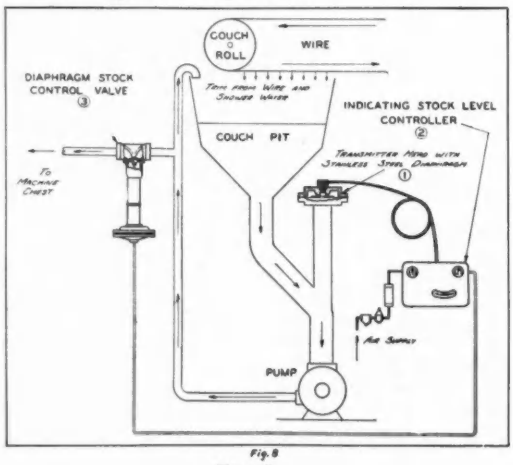


FIG. 8.

Installation Sketch of Couch Pit Automatic Stock Level Control Transmitter Mounted on External Pipe.

Imports of Paper and Paper Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports, of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard, Wallboard, Cigarette Papers, Sulphite, Kraft and Ground Wood Pulp.

NEW YORK IMPORTS

WEEK ENDING MARCH 19, 1938

SUMMARY

Cigarette paper .....963 cs.
Wall paper .....5 bxs, 13 cs.
Paper hangings .....18 bls., 2 cs.
Painted paper .....3 cs.
Wall board .....170 bls., 76 bdls.
Newsprint ..... 2,927 rolls
Printing paper .....31 cs.
Wrapping paper .....2323 rolls, 322 bls., 11 cs.
Filter paper ..... 17 cs.
Surface coated paper .....147 cs.
Surface baryta coated paper .....50 crates
Imitation parchment paper .....11 cs.
Basic paper .....1 cs.
Transparent paper .....6 cs.
Decalcomania paper ..... 13 cs.
Decalcomanias .....23 cs.
Transfer pictures .....2 cs.
Transfer paper .....10 cs.
Colored paper .....1 cs.
Gummed paper ..... 3 cs.
Tissue paper .....35 cs.
Writing paper .....1 cs.
Paper tubes .....71 ctns, 21 cs.
Miscellaneous paper ..... 1,053 rolls, 155 bls., 125 cs.

CIGARETTE PAPER

R. J. Reynolds Tobacco Co., *Pr. Harding,* Havre, 140 cs.
R. J. Reynolds Tobacco Co., *Manhattan,* Havre, 93 cs.
De Mauduit Paper Corp., *Manhattan,* Havre, 224 cs.
Champagne Paper Corp., *Ile de France,* Havre, 506 cs.

WALL PAPER

Hudson F'd'g & Shipping Co., *Pr. Harding,* Havre, 1 cs.
S. K. Lonegren, *Drottningholm,* Gothenburg, 5 bxs.
F. Blank & Co., *Manhattan,* Havre, 12 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Banker,* London, 18 bls., 2 cs.

PAINTED PAPER

W. H. S. Lloyd & Co., *Ile de France,* Havre, 2 cs.
——, *Ile de France,* Havre, 1 cs.

WALL BOARD

A. H. Morner, *Drottningholm,* Gothenburg, 76 bdls.
A. Johnson & Co., *Drottningholm,* Gothenburg, 170 bls.

NEWSPRINT

N. Y. Evening Journal, *Pr. Harding,* Hamburg, 115 rolls.
Jay Madden Corp., *Pr. Harding,* Hamburg, 290 rolls.
Lunham & Reeve, Inc., *Cliffwood,* Helsingfors, 308 rolls.
Jay Madden Corp., *Cliffwood,* Helsingfors, 322 rolls.
Jay Madden Corp., *Caroline Thorden,* Hango, 724 rolls.
Lunham & Reeve, Inc., *Caroline Thorden,* Hango, 306 rolls.
Jay Madden Corp., *Scanyork,* Helsingfors, 169 rolls.
Jay Madden Corp., *Manhattan,* Hamburg, 209 rolls.
N. Y. Evening Journal, *Manhattan,* Hamburg, 115 rolls.
Perkins Goodwin & Co., *Deutschland,* Hamburg, 80 rolls.
Jay Madden Corp., *Deutschland,* Bremen, 289 rolls.

PRINTING PAPER

Senefelder Co., *Pr. Harding,* Hamburg, 12 cs.
T. N. Fairbanks Co., *American Banker,* London, 1 cs.
Davies & Co., *Manhattan,* London, 4 cs.
Steiner Paper Corp., *Deutschland,* Bremen, 14 cs.

WRAPPING PAPER

Jay Madden Corp., *Pr. Harding,* Hamburg, 1,352 rolls.
Chemical Bank Trust Co., *Drottningholm,* Gothenburg, 69 bls.
Eagle Paper & Twine Co., *Drottningholm,* Gothenburg, 159 rolls, 90 bls.
L. Glickman & Co., *Drottningholm,* Gothenburg, 87 rolls.
Metropolitan Paper & Bag Corp., *Drottningholm,* Gothenburg, 60 bls., 680 rolls.
Crepe Kraft Co., *Drottningholm,* Gothenburg, 45 rolls.
Keller Dorian Paper Co., *Exochorda,* Marseilles, 9 cs.
Equitable Paper Bag Co., *Manhattan,* Hamburg, 93 bls.
Phoenix Shipping Co., *Deutschland,* Hamburg, 2 cs.
Heemsoth Kerner Corp., *Deutschland,* Bremen, 10 bls.

FILTER PAPER

E. H. Sargent & Co., *Drottningholm,* Gothenburg, 7 cs.
H. Reeve Angel & Co. Inc., *American Banker,* London, 10 cs.

SURFACE COATED PAPER

Gevaert Co. of America, *Westernland,* Antwerp, 147 cs.

SURFACE BARYTA COATED PAPER

Globe Shipping Co., *Deutschland,* Bremen, 50 crates.

IMITATION PARCHMENT PAPER

F. J. Markwalter Co., *Deutschland,* Hamburg, 11 cs.

BASIC PAPER

Dingelstedt & Co., *Westernland,* Antwerp, 1 cs.

TRANSPARENT PAPER

M. J. Corbett & Co., *Spaarndam,* Rotterdam, 6 cs.

TRANSFER PICTURES

Rohner Gehrig & Co., *Europa,* Bremen, 2 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *American Importer,* Liverpool, 13 cs.

DECALCOMANIAS

Sellers Transportation Co., *Europa,* Bremen, 22 cs.
Phoenix Shipping Co., *Europa,* Bremen, 1 cs.

TRANSFER PAPER

Fuchs & Lang Manfg. Co., *Deutschland,* Hamburg, 10 cs.

COLORED PAPER

D. B. Andrews & Co. Inc., *Europa,* Bremen, 1 cs.

GUMMED PAPER

——, *Europa,* Bremen, 3 cs.

TISSUE PAPER

Columbia Carbon & Ribbon Manfg. Co., *American Banker* London, 1 cs.
Van Oppen & Co., *Exochorda* Genoa, 34 cs.

WRITING PAPER

American Express Co., *Manhattan* Havre, 1 cs.

PAPER TUBES

——, *Deutschland,* Bremen, 71 ctns., 21 cs.

MISCELLANEOUS PAPER

A. Johnson & Co., *Drottningholm,* Gothenburg, 70 rolls.
The Borregaard Co. Inc., *Drottningholm,* Gothenburg, 19 bls., 883 rolls.
Kramer & Co., *Drottningholm,* Gothenburg, 136 bls., 20 rolls.
——, *Cameronia,* Glasgow, 80 rolls.
Japan Paper Co., *Anna Maersk,* Kobe, 34 cs.
Cartier, Inc., *Ile de France,* Havre, 2 cs.
Coty Processing Co., *Ile de France,* Havre, 5 cs.
Keuffel & Esser Co., *Deutschland,* Hamburg, 84 cs.

BAGS, BAGGING, ETC.

M. Snedeker Corp., *American Importer,* Belfast, 91 bls., paper stock.
——, *Wetsternland,* Antwerp, 137 bls. rags.

Hughes Fawsett, Inc., *Cameronia,* Glasgow, 63 bls. flax waste.
Bank of N. Y. Trust Co., *Barbarigo,* Genoa, 288 bls. rags.
———, *Barbarigo, Genoa,* 30 bags waste paper.
Chase National Bank, *Kunikawa Maru,* Kobe, 25 bls. rags.
E. J. Keller Co. Inc., *Exochorda,* ———, 28 bls. paper stock.
R. Blank, *Exochorda,* Alexandria, 66 bls. rags.
W. Steck & Co., *Exochorda,* Alexandria, 217 bls. bagging, 263 bls. rags.
———, *Exochorda,* Alexandria, 100 bls. bagging.

BONE GLUE

———, *Barbarigo,* Genoa, 100 bags.
———, *Deutschland,* Hamburg, 100 bags.

OLD ROPE

———, *Bassano,* Newcastle, 105 coils.

WOOD PULP

The Borregaard Co. Inc., *Stavangerfjord,* Sarpsborg, 1,000 bls. sulphate.
Guaranty Trust Co., *Barbarigo,* Genoa, 2,499 bls. sulphite.
Absorbo Beer Pad Co., *Barbarigo,* Genoa, 325 bls. wood pulp.
A. Giese & Son, *Volendam,* Rotterdam, 30 bls. wood pulp.
Castle & Overton, Inc., *Cliffwood,* Helsingsfors, 479 bls. sulphite, 94 tons.
Pulp Sales Corp., *Cliffwood,* Helsingfors, 7,193 bls. sulphate, 1,438 tons.
Stora Kopparberg Corp., *Cliffwood,* Gefle, 530 bls. dry pulp 107 tons.
Castle & Overton, Inc., *Deutschland,* Hamburg, 800 bls. wood pulp 158 tons.

WOOD PULP BOARDS

———, *Caroline Thorden,* Hango, 400 rolls.
H. Fuchs & Son, *Drottningholm,* Gothenburg, 61 cs.
Darcy Export Co., *Drottningholm,* Gothenburg, 36 bls.
Fibre Case & Novelty Co., *Drottningholm,* Gothenburg, 39 bls.
Oliner Fibre Co., *Drottningholm,* Gothenburg, 13 bls.
Jay Madden Corp., *Cliffwood,* Helsingfors, 155 bls., 54 rolls —46 tons.
Jay Madden Corp., *Scanyork,* Helsingfors, 96 bls., 76 rolls.
Fibre Products Manfg. Co., *Manhattan,* Hamburg, 30 bls.
W. Bersch & Co., *Deutschland,* Hamburg, 175 bls.
A. Giese & Son, *Volendam,* Rotterdam, 7 cs. (discs)

BOSTON IMPORTS

WEEK ENDING MARCH 19, 1938

———, *Barbarigo,* Genoa, 400 bags bone glue.
Price & Pierce, Ltd., *Trafalgar,* ———, 750 bls. bleached sulphite.

PORTLAND IMPORTS

WEEK ENDING MARCH 19, 1938

Pulp Sales Corp., *Cliffwood,* Helsingfors, 4,612 bls. sulphite, 906 tons.
Pulp Sales Corp., *Cliffwood,* Helsingfors, 1,450 bls. sulphate, 242 tons.
Stora Kopparberg Corp., *Cliffwood,* Gefle, 4,905 bls. dry pulp, 995 tons.

WILMINGTON IMPORTS

WEEK ENDING MARCH 19, 1938

Castle & Overton, Inc., *Scanyork,* Helsingfors, 966 bls. sulphite, 193 tons.
Jay Madden Corp., *Scanyork,* Helsingfors, 760 rolls, wood pulp boards, 87 tons.
Pulp Sales Corp., *Scanyork,* Helsingfors, 6,967 bls. sulphite, 1,393 tons.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 19, 1938

United Clay Mines Corp., *Spaarndam,* Rotterdam, 50 bags china clay.
Castle & Overton, Inc., *Spaarndam,* Rotterdam, 81 bls. rags.
———, *Spaarndam,* Rotterdam, 21 cs. grease proof paper.
F. Whitaker, *Indep. Hall,* Dunkirk, 38 bls. jute waste.
Stora Kopparberg Corp., *Cliffwood,* Gefle, 1,325 bls. dry pulp, 268 tons.
J. W. Hampton, Jr., & Co., *Caroline Thorden,* Hango, 308 rolls newsprint.
Public Ledger, Inc., *Caroline Thorden,* Hango, 490 rolls newsprint.
Wilkinson Bros. & Co. Inc., *Caroline Thorden,* Hango, 84 rolls newsprint.
Jay Madden Corp., *Caroline Thorden,* Hango, 480 bls. wood pulp boards.
Lagerloef Trading Co., *Caroline Thorden,* Hango, 520 bls. mechanically ground pulp.
Pulp Sales Corp., *Caroline Thorden,* Hango, 1,826 bls. sulphate.
J. W. Hampton, Jr. & Co., *Scanyork,* Helsingfors, 470 rolls newsprint.
Jay Madden Corp., *Scanyork,* Helsingfors, 252 bls. wood pulp boards.
Neidich Process Co., *Scanyork,* Helsingfors, 42 bls. tissue paper.
Johaneson Wales & Sparre, Inc., *Scanyork,* Gdynia, 750 bls. dry soda pulp, 75 tons.

BALTIMORE IMPORTS

WEEK ENDING MARCH 19, 1938

Castle & Overton, Inc., *Caroline Thorden,* Hango, 2,065 bls. sulphite.
Hearst Consolidated Publications Inc., *Caroline Thorden,* Hango, 304 rolls newsprint.
Scripps Howard Supply Co. Inc., *Caroline Thorden,* Hango, 63 rolls newsprint.
Jay Madden Corp., *Caroline Thorden,* Hango, 1,431 rolls newsprint.

NORFOLK IMPORTS

WEEK ENDING MARCH 19, 1938

National Bank of Commerce, *Anna Maersk,* Kobe, 600 bls. bagging.
Gottesman & Co. Inc., *Gunda,* Sweden, 4,591 bls. unbleached sulphite.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 19, 1938

Gottesman & Co. Inc., *Gunda,* Sweden, 1,750 bls. sulphate.

DIPLOMAS AWARDED GRADUATES

(Continued from page 22)

he said would be held early in April, probably April 8th, in the banquet room of the Poor Richard Club, 1319 Locust street. The shad dinner has been an annual affair for the last five years and affords an opportunity for the members to get together and have an enjoyable social evening.

Chairman E. L. Richards of the Golf Committee announced that his committee has set May 18 as the opening date for the summer Club Tournament. The first tournament on this date will be held at Pine Valley, and already twenty members have expressed their intention of participating. Members are invited to bring as many guests as they wish.

C. B. Morgan Made Vice-President

Clyde B. Morgan has been elected vice-president of Rayonier, Incorporated, 343 Sansome street, San Francisco. Mr. Morgan, whose headquarters are now at Fernandina, Fla., will move to the New York offices of the company, although he will continue his supervision of the Fernandina development.

Addresses Baldwin Personnel

The regular meeting of the sales personnel of the Baldwin Paper Company Inc. last week was addressed by Joseph Moses, sales manager of Falulah Paper Company, who delivered an exceptionally enlightening talk covering the advantages of Falpaco Coated Cardboards. Sixteen Baldwin salesmen were present.

Let us take care of your REJECTIONS, over-runs or seconds.

We have branches in fourteen different cities and can sell your rejections for you at a minimum expense to you; wherever they occur.

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ENGLISH FINISH SUPERCALENDERED
MACHINE FINISHED BOOK
and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Mimeograph, Ledger, Eggshell, Cover and Music Papers, Index Bristol, Post Card and Label Papers

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KRAFT WRAPPING AND KRAFT ENVELOPE.
KRAFT CYLINDER BOARD.
BLEACHED SULPHITE AND SODA PULP.
BLEACHED AND UNBLEACHED KRAFT PULP.

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Lake, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia
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FREDERICK Centrifugal PUMPS

CLOGLESS FOR HI-DENSITY STOCK

CENTRIFUGAL PUMPS FOR ALL PAPER MILL PURPOSES

ASH CONVEYORS——————STOKERS

THE FREDERICK IRON & STEEL CO.

FREDERICK, MARYLAND

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 23, 1938.

The demand for paper is reported in the wholesale market as light. More inquiries are being received in some grades of paper and a little improvement in sales volume is reported by a few jobbers and dealers. Business, however, continues at a low level and while inventories are now in most cases reduced to a minimum, lack of confidence in the future trend of business continues to keep buying largely for immediate needs in relatively small quantities.

Some reports of price cutting below the current contract and spot market quotations are reported here and there, but this questionable practice of securing business is of negligible extent in most grades of paper. The market as a whole is of healthy tone and prices are fairly well maintained on a fair profit for all level.

The demand for newsprint continues active with shipments of contract orders moving in good volume.

The demand for sulphite papers is reported as a little improved for the current week and the same report covers the demand for ground wood papers. Fine papers are relatively quiet. The demand for kraft is reported to be gaining slowly by some distributors but only a gradual improvement in sales volume is looked for in the immediate future. The box board market reports activity at a relatively low level, with no noteworthy change in prices or demand for the week.

Chemical Pulp

The demand for chemical pulp continues to be reported as very light. No noteworthy change in prices are reported. More inquiries are being received by the trade and while no imediate improvement is expected, better business conditions are expected in the second quarter.

Mechanical Pulp

The demand for mechanical pulp continues very light. Prices are unchanged at prevailing quotations.

Old Rope and Bagging

The old rope market continues practically inactive. The demand for bagging is very light. Prices of both rope and bagging are unchanged at prevailing quotations. Little change in either demand or prices is expected by the trade in the near future.

Rags

The domestic rag market continues to report business as very light. Prices as a whole are unchanged from the quotations which have prevailed for some weeks, with the exception of No. 1 white repacked rags, which are lower for the current week. The foreign rag market continues inactive and nominal prices prevail.

Waste Paper

The demand for waste paper continues at a very low level. Prices are unchanged, with the exception of strictly folded news, which is lower for the current week.

Twine

The demand for all grades of hard and soft fiber twines continues very light. No change in prices are reported for the current week.

Government Paper Bids

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 23, 1938—The Government Printing Office has received the following bids for 106,000 pounds (237,000 sheets) of white sulphite index paper: Virginia Paper Company, 6.25 cents; Marquette Paper Company, 6.35 cents; R. P. Andrews Paper Company, 6.17 cents; Barton, Duer & Koch Paper Company, 6.11 cents; Stanford Paper Company, 6.49 cents; Reese & Reese Inc., 6.16 cents; Paper Corporation of U. S., 6.6 cents; Old Dominion Paper Company, 6.4 cents; Whitaker Paper Company, 6.6 cents; Aetna Paper Company, 6.52 cents; Mathers-Lamm Paper Company, 6.15 cents; Enterprise Paper Company, 6.74 cents less 2 per cent; Andrews Paper House of York, 6.25 cents; Cauthorne Paper Company, 6.128 cents; John F. Post, Inc., 6.6 cents; Import Paper Company, 6.6 cents less 2 per cent; James F. Walsh Paper Corp., 6.33 cents; George W. Millar & Co., 6.25 cents; and Walker Goulard Plehn Company, 6.25 cents less 1 per cent.

For 1,500 pounds (46,000 sheets) of 24 x 38 white paraffin paper: R. P. Andrews Paper Company, 9.75 cents; Enterprise Paper Company, 9.56 cents less 2 per cent; Mathers-Lamm Paper Company, 10.5 and 10 cents; Whitaker Paper Company, 9.4 cents; Cauthorne Paper Company, 9.48 cents; and Walker, Goulard Plehn Company, Inc., 10.5 cents less 2 per cent.

Southern Kraft To Start New Mill Soon

A press dispatch from Minden says that "The Southern Kraft Paper Co. plant, a $7,000,000 construction, at Cullen, about six miles from Springhill, in this parish, a subsidiary of the International Paper Company, probably will be ready for beginning of operation by April 15, according to W. F. Davis, in charge of operations.

"Originally it had been planned to begin operation of one unit of the pulp mill about the middle of March, but these plans have been abandoned until full operation of the plant mill is begun, either about the middle of April or early in May, it was said."

Wrinkles *are out!*

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Very newest design and type . . . a modern machine that cannot fail to apply adhesive smoothly without "ribbing" . . . regardless of type of adhesive used . . . paste, asphalt, lacquer, latex, thermoplastics. A sturdily built, accurately proportioned laminating machine for combining cloth, paper, paper and board, regenerated cellulose.

Our experienced engineering staff can advise you on your production problems.

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Perforated Screens
For Pulp and Paper Mills

Steel, Copper, Brass
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Punched for Centrifugal
and Rotary Screens,
Pulp Washers, Drainer
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Built for modern paper making . . here in a Jordan that maintains original efficiencies, provides uniform stock preparation, accurate control and gives superior operating performance . . There is a size for every refining requirement.

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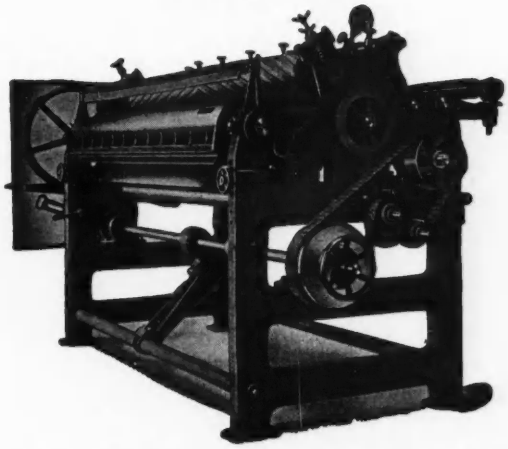
MODEL 28
ROLLER BEARING
CUTTER



HAMBLET MACHINE CO.
LAWRENCE, MASS.

MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS.
CUTTER KNIVES, PATENT TOP SLITTERS.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 23, 1938.

BLANC FIXE—The prices of blanc fixe continue firm and conform to prevailing quotations. The pulp is quoted at from $42.50 to $45 per ton, in bulk; the powder is quoted at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER — The price of bleaching powder is firm and unchanged at prevailing prices. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN — The demand for casein is reported as slightly improved for the current week. Prices are firm. Domestic standard ground casein is quoted at from 8½ to 9 cents per pound; domestic finely ground at 10 to 10½ cents per pound; all in bags, car lot quantities.

CAUSTIC SODA—Prices of caustic soda continue firm and unchanged at prevailing quotations. Solid caustic soda is quoted at from $2.10 to $2.30 per 100 pounds; flake and ground at from $2.50 to $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—The prices of china clay are reported firm and unchanged at prevailing quotations. Imported clay is quoted at from $14.50 to $25 per ton, ship side. Domestic filler clay is offered at from $6.50 to $12 per ton; coating clay at from $11 to $22 per ton, at mines.

CHLORINE—The price of chlorine continues firm and unchanged at prevailing quotations. Chlorine is quoted at $2.15 per 100 pounds, in single-unit tank cars, f.o.b. works.

ROSIN — The prices of many grades of rosin are slightly higher for the current week. The market is firm and demand fair. "G" gum rosin is quoted at $5.05; wood rosin at $5.10 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is quoted at $2.77 per 100 pounds, f.o.b., shipping point.

SALT CAKE—Prices of salt cake continue firm and unchanged at prevailing quotations. Prices range at from $12 to $13.50 per ton; chrome salt cake at from $11 to $12 per ton, f.o.b., shipping point. Imported salt cake is quoted at from $14.50 to $15 per ton, Gulf or Atlantic Seaboard, on dock.

SODA ASH—The prices of soda ash are reported as firm and unchanged at prevailing quotations. Prices of soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $.90; in bags, $1.05; and in barrels, $1.35.

STARCH—The corn starch market is reported as firm and prices are unchanged for the current week. Globe pearl is quoted at $2.55 per 100 pounds, in bags, and at $2.80 in barrels. Special paper starch is offered at $2.65 per 100 pounds, in bags, and at $2.90 in barrels; all prices in car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—The prices of sulphate of alumina are reported as firm and unchanged at prevailing quotations. The commercial grades are quoted at from $1.25 to $1.60 per 100 pounds; iron free at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR—The prices of sulphur continue firm and conform to prevailing quotations. Annual contracts are quoted at $18 per long ton, f.o.b., cars at mines. Spot and nearby car lots are offered at $21 per ton.

TALC—Prices of talc are reported as firm and unchanged at prevailing quotations. Domestic talc is offered at from $15 to $18 per ton, Eastern mines. Imported talc is quoted at from $25 to $40 per ton, on dock.

Market Quotations

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	@	—
Kraft—per cwt.—Delivered Zone A			
No. 1 Northern	$5.25	@	—
Superstandard	5.00	@	—
Northern Standard Wrapping	4.75	@	—
Standard Wrapping	4.50	@	—
Tissues—Per Ream—Carlots			
White No. 1	1.02½	@	—
White No. 1 M. G.	.97½	@	—
White No. 1½	.67½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.75	@	—
Colored	.87½	@	—
Kraft	.75	@	—
Manila	.60	@	—
Unbl. Toilet, 1 M.	3.40	@	—
Bleached Toilet	5.26	@	—
Paper Towels—			
Unbleached	1.95	@	—
Bleached	5.15	@	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	$8.25	@	$10.25
No. 2 Jute	7.50	@	9.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Boards, per ton—			
News	$30.00	@	$32.50
Chip	30.00	@	—
Sgl. Mla. Ll. Chip	45.00	@	—
Jute Lined Chip	45.00	@	—
White Pat. Coated	57.50	@	—
Kraft Liners	55.00	@	—
Binders Boards	75.00	@	80.00

The following are representative of distributors' resale prices:—

Rag Content Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext. No. 1	$41.40@$48.50	$42.55@$50.00
100% Rag	32.80@ 38.50	33.95@ 39.75
85% Rag	.....	32.20@ 37.75
75% Rag	24.75@ 29.00	25.90@ 30.50
65% Rag	21.65@ 26.25	22.80@ 27.75
50% Rag	18.70@ 22.75	19.90@ 24.25
45% Rag	15.80@ 19.25	16.95@ 20.75

Regular Colors @ $1.50 cwt. extra.
Heavy Colors @ $3.00 cwt. extra

Sulphite Bonds and Ledgers—
White, Assorted Items,
Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$8.80@$10.75	$9.95@$12.00
No. 2	7.90@ 9.50	9.05@ 11.00
No. 4	7.00@ 8.50	8.20@ 10.00

Colors .75 cwt. extra.

Free Sheet Book Papers—
White, Cased Paper,
Delivered in Zone 1:

No. 1 Glossy Coated	$12.15@$14.25
No. 2 Glossy Coated	10.55@ 12.25
No. 3 Glossy Coated	9.35@ 11.00
No. 4 Glossy Coated	8.80@ 10.50
No. 1 Antique (watermarked)	8.80@ 10.50
No. 2 Offset	8.05@ 9.50
A Grade E. F.	7.90@ 9.50
A Grade S. & S. C.	8.15@ 9.75
B Grade E. F.	7.30@ 8.75
B Grade S. & S. C.	7.55@ 9.00
C Grade E. F.	7.00@ 8.50
C Grade S. & S. C.	7.25@ 8.75
D Grade E. F.	6.75@ 8.25
D Grade S. & S. C.	7.00@ 8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	33.00	@	34.00
Dry	38.00	@	40.00

(Delivered)

No. 1 Domestic and Canadian	27.00	@	32.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.00	@	4.15
Prime Qualities—			
Easy-Bleaching Sulphite	2.50	@	3.00
Strong Unbleached Sulphite	2.25	@	2.75

(On Dock, Atlantic Ports)

Kraft Bleached	3.00	@	3.25
Kraft Light & Strong	2.50	@	3.00
Kraft No. 1	2.25	@	2.75
Kraft No. 2	2.00	@	2.25

(F.o.b. Pulp Mill)

Kraft Domestic	2.00	@	2.50

(Delivered)

Soda Bleached	2.90	@	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.00	@	7.25
Silesias No. 1	5.00	@	5.25
New Unbleached	7.75	@	8.25
Blue Overall	5.50	@	6.00
Fancy	3.00	@	3.10
Washables	2.10	@	2.25
Mixed Khaki Cuttings	3.60	@	3.75
O. D. Khaki Cuttings	4.35	@	4.50

Old Rags

White, No. 1—			
Repacked	3.40	@	3.50
Miscellaneous	2.75	@	3.00
White, No. 2—			
Repacked	2.10	@	2.25
Miscellaneous	1.70	@	1.80
Thirds and Blues—			
Repacked	1.40	@	1.50
Miscellaneous	1.25	@	1.30
Roofing Rags—			
No. 1	1.15	@	1.25
No. 2	.95	@	1.00
No. 3 (bagging)	.65	@	.70
No. 4	.65	@	.70
No. 5A	.65	@	.70

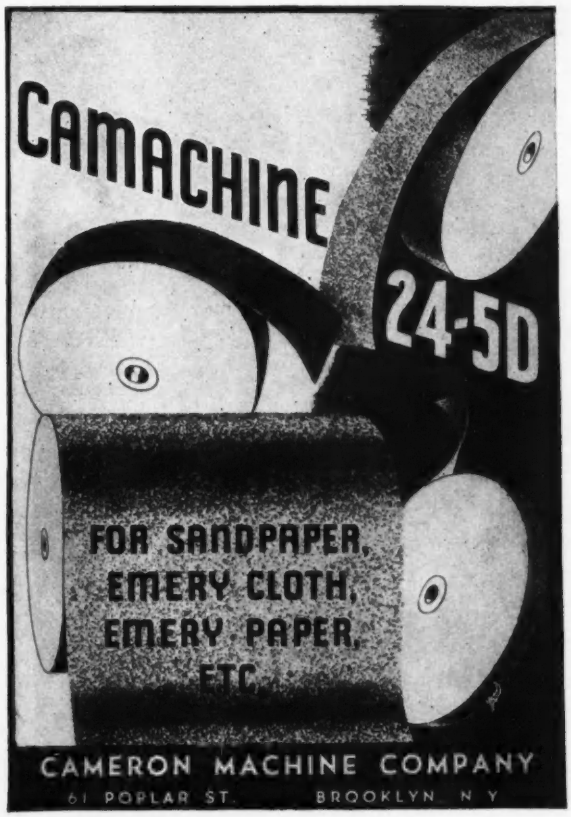
Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	@	2.20
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.30
New Light Oxford	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.50
No. 2 White Linens	6.50	@	7.50
No. 3 White Linens	4.50	@	5.50



HIGHEST GRADE
CLAYS

EASTON PAPER MAKERS IMPORTING CO. INC. EASTON, PENNSYLVANIA, U.S.A.

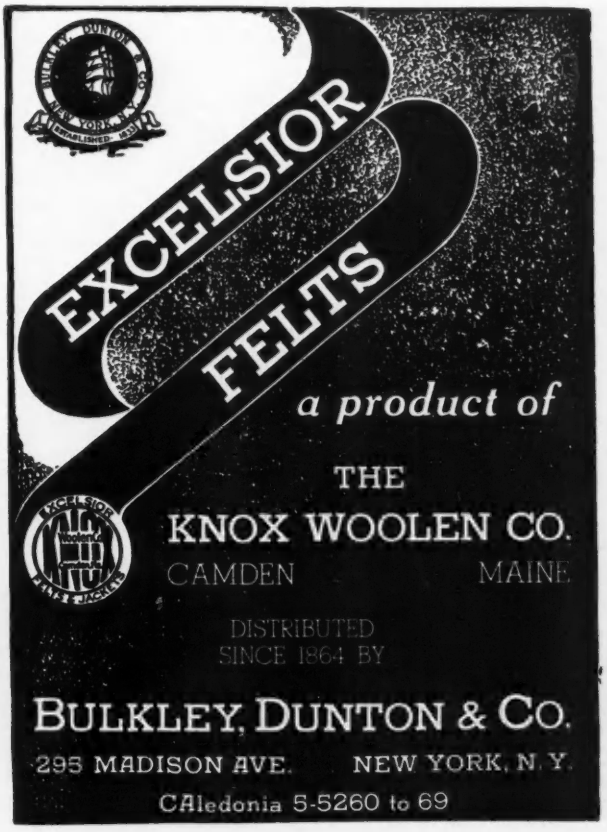
COATING FILLING
POWDERED

CHEMICAL
LINING ENGINEERS INC.
ACID AND ALKALINE CHEMICAL
RESISTING LININGS
Delivered - Installed - Guaranteed
832 Builders Exchange
MINNEAPOLIS, - MINN.

THE OLD PAPER MAKER SAYS...

"I've used CINCINNATI RUBBER COVERED ROLLS for 20 YEARS . . . . . THERE'S NONE BETTER"

THE CINCINNATI RUBBER MFG. CO.
CINCINNATI, OHIO



No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	@	4.75
No. 2 White Cotton.	3.25	@	3.75
No. 3 White Cotton.	2.50	@	3.00
No. 4 White Cotton.	1.90	@	2.20
Extra Light Prints..	2.00	@	2.40
Ord. Light Prints...	1.75	@	2.15
Med. Light Prints...	1.55	@	1.95
Dutch Blue Cottons..	2.25	@	2.50
French Blue Linens..	3.00	@	—
Checks and Blues...	2.00	@	—
Linsey Garments....	1.90	@	2.00
Dark Cottons.....	1.50	@	1.60
Old Shopperies.....	1.30	@	1.45
New Shopperies.....	1.45	@	1.50
French Blues.....	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.20	@	2.25
Domestic	2.00	@	2.15
Wool Tares, light....	1.50	@	1.75
Wool Tares, heavy..	2.00	@	2.10
Bright Bagging.....	1.60	@	1.70
Manila Rope—			
Foreign	3.00	@	3.25
Domestic	2.75	@	3.00
Jute Threads.....	2.75	@	3.00
Sisal Strings.....	1.75	@	2.00
Mixed Strings.....	.60	@	.70

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.40	@	2.50
Ordinary Hard White No. 1....	1.90	@	2.00
Soft White No. 1..	1.80	@	2.20
Flat Stock—			
Stitchless	.70	@	.80
Overissue Mag.....	.60	@	.70
Solid Flat Book...	.55	@	.60
Crumbled No. 1...	.40	@	.45
Ledger Stock.....	.90	@	.95
New B. B. Chips....	.15	@	.20
Manila—			
New Env. Cut....	1.85	@	2.00
New Cuttings.....	1.50	@	1.60
Old Kraft Machine—			
Compressed bales..	.70	@	.80
News—			
No. 1 White News	1.25	@	1.30
Strictly Overissue.	.45	@	.50
Strictly Folded....	.27½	@	.30
No. 1 Mixed Paper..	.10	@	.12½

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.12½	@	.14
White Hemp.....	.13½	@	.15
Fine Polished—			
Fine India.....	.16	@	.18
Unpolished—			
Box	.09	@	—
Paper Makers.....	.08	@	.09½
Tube Rope.....	.10¾	@	.11½
Wall Paper.....	.10¾	@	.11½
Wrapping	.12	@	.14
Soft Fiber Rope...	.10¾	@	.11¼
Cotton	.16	@	.22
(Hard Fiber)			
Medium Java.....	.09	@	.10
Mex. Sisal.....	.08½	@	.09½
Manila	.18	@	.25
Domestic	2.25	@	2.50
Sisal Rope.....	1.65	@	1.75
Mixed Rope.....	.50	@	.55
Transmission Rope..	1.00	@	1.25
Soft Jute Ropes.....	1.90	@	2.00
Jute Carpet Threads.	1.00	@	1.50
Gunny Bagging—			
Foreign	2.25	@	2.30
Domestic	1.85	@	2.00
Bleachery Burlap....	3.50	@	4.00
Scrap Burlap—			
Foreign	1.65	@	1.80
Domestic	1.50	@	1.60
Scrap Sisal	1.25	@	1.50
Scrap Sisal for Shredding	1.85	@	2.00
Wool Tares, Heavy..	1.60	@	1.80
New Burlap Cuttings	1.85	@	2.00
Aust. Wool Pouches.	2.75	@	3.00
Heavy baling bagging	1.75	@	1.90
Paper Mill Bagging.	1.50	@	1.60
Bagging No. 2.....	.85	@	1.00

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	.03	@	.03¼
New White No.1..	.06¾	@	.07
New White No. 2.	.05	@	.05½
New Light Flannelettes	—	@	.05½
Silesias No. 1.....	.05½	@	.06
New Black Silesias..	.03¾	@	.04
Silesias No. 1 Soft Unbleached.....	.06¾	@	.07
Blue Cheviots.....	.05	@	.05½
Fancy	.03	@	.03¼
Washable	.02¾	@	.03
Cottons—According to grades—			
Blue Overalls.....	.05	@	.05½
New Black, soft...	.03¾	@	.04
Khaki Cuttings....	.03¼	@	.03¾
D. D. Khaki.....	.04	@	.04½
Corduroy	.02¾	@	.03
New Canvas.....	.07½	@	.07¾
B.V.D. Cuttings.....	.06¾	@	.07¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues.....	1.75	@	2.00
Third and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings.....	3.90	@	4.00
Roofing Stock—			
No. 1.....	1.00	@	1.10
No. 2.....	.75	@	.85
No. 3.....	.65	@	.70

Foreign Rags

(F. o. b. Boston)

Dark Cottons.....	1.10	@	1.20
Dutch Blues.....	2.75	@	2.90
New Checks and Blues	2.85	@	3.00
Old Fustians.....	2.50	@	2.60
Old Linsey garments.	1.75	@	1.90
New Silesias.....	6.00	@	6.50

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.06	@	.06½
New White, No. 2.	.04	@	.04½
Light Silesias.....	—	@	.05
Silesias, No. 1....	—	@	.04½
Black Silesias, soft.	.03	@	.03¼
New Unbleached..	—	@	.06
Washable, No. 1..	.01½	@	.01¾
Blue Overall.....	.04	@	.04½
Cottons—According to grades—			
Washable, No. 2..	.01¼	@	.01½
New Blue.....	.01¾	@	.01¾
Fancy Percales....	—	@	.03
New Black Soft...	.03	@	.03½
New Light Seconds	—	@	.04½
New Dark Seconds	.75	@	1.00
Khaki Cuttings—			
No. 1 O. D.....	.03½	@	.04
No. 2 Mixed.....	—	@	.02¾
Corduroy	—	@	.02
New Canvas.....	.05	@	.05½
New Black Mixed.	.02½	@	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.00
Miscellaneous	2.25	@	2.50
Thirds and Blues—			
Miscellaneous	1.25	@	1.50
Repacked	1.50	@	1.75
Black Stockings (Export)	3.00	@	3.50
Roofing Stock—			
Foreign No. 1....	—	@	.75
Domestic No. 1...	—	@	.75
Domestic No. 2...	.65	@	.75
Roofing Bagging..	.80	@	.90

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.75	@	—
Domestic	1.70	@	1.75
Manila Rope.....	3.00	@	3.25
Sisal Rope.....	1.75	@	2.00
Mixed Rope.....	.75	@	1.00
Scrap—			
No. 1.....	1.50	@	—
No. 2.....	1.00	@	1.25
Wool Tares, heavy..	3.25	@	3.50
Mixed Strings.....	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.00	@	2.25

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White.	2.35	@	2.40
No. 2 Hard White.	2.00	@	2.10
No. 1 Soft White..	2.00	@	2.10
No. 2 Soft White..	1.40	@	1.50
No. 1 Mixed.....	.70	@	.75
Solid Ledger Stock..	1.50	@	1.60
Ledger Stock, white.	1.25	@	1.30
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy..	.85	@	.90
Manila Cuttings.....	1.50	@	1.75
Print Manila.....	.45	@	.50
Container Manila....	—	@	.40
Kraft Paper.....	.90	@	.95
No. 1 Mixed Paper..	.25	@	.30
Straw Board Chip...	.25	@	.30
Binders Board Chip.	.25	@	.30
Corrugated Board...	.50	@	.55
Overissue News.....	.55	@	.60
Old Newspapers	.30	@	.35

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White.	2.25	@	2.40
No. 1 Soft White..	1.85	@	2.15
No. 2 Mixed.....	.75	@	.80
Solid Ledger Books..	1.50	@	1.75
Overissue Ledger Stock	1.30	@	1.50
Mixed Ledgers.....	.85	@	.90
No. 1 Books, heavy..	.65	@	.75
No. 1 Books, light...	.65	@	.75
Crumpled Stitchless Book Stock.....	.55	@	.65
Manila Env. Cuttings	1.60	@	1.70
Manila Envelope Cuttings, extra quality	2.00	@	2.10
No. 1 Old Manila....	.85	@	.95
White Blank News..	1.30	@	1.40
No. 1 Kraft.....	.90	@	1.00
Mixed Papers.....	.10	@	.12½
Print Manila.....	.45	@	.50
Container Manilas...	.27½	@	—
Old Newspapers.....	.25	@	.32½
Paper Wool Strings..	—	@	.50
Overissue News.....	.45	@	.50
Box Board Chips....	.20	@	.25
Corrugated Boxes....	.30	@	.32½
Kraft corrugated boxes	.60	@	.65
Screenings wrappers.	.45	@	.50

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.25	@	2.50

CHICAGO

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	3.15	@	3.25
No. 1 Hard White.	2.50	@	2.60
No. 1 Soft White..	2.05	@	2.10
Ledger & Writings..	1.30	@	1.40
Solid Books.....	1.20	@	1.25
Blanks	1.40	@	1.50
Krafts	.90	@	1.00
New Kraft Cuts.....	1.70	@	1.80
Manila Env. Cuts...	2.15	@	2.25
Ex. No. 1 Manila...	2.15	@	2.25
Print Manila.....	1.70	@	1.80
Overissue News.....	.60	@	.70
Old Newspapers—			
No. 1 Folded News	.45	@	.50
No. 1 Mixed Paper	.35	@	.40
Roofing Stocks—			
No. 1.....	2.00	@	2.21
No. 2.....	1.85	@	2.00

TORONTO

Paper

Bonds and Ledgers

Delivered

No. 1 White	.35½	@	.36½
No. 1 Tints	.36½	@	.37½
No. 2 White	.26½	@	—
No. 2 Tints	.27½	@	—
No. 4 White	—	@	.1550
No. 4 Tints	.16	@	.1650
No. 5 Bond—White .	11.35	@	—
No. 5 Bond—Tints .	12.35	@	—
No. 5 Bond—Golden Rod	13.35	@	—
No. 5 Ledger—White .	.1185	@	—
No. 5 Ledger—Tints.	.1285	@	—
No. 6 Bond—White .	10.75	@	—
No. 6 Bond—Tints .	11.25	@	—
No. 6 Bond—Golden Rod	12.75	@	—
No. 7 Bond—White .	9.10	@	—
No. 7 Bond—Tints .	9.60	@	—
No. 7 Bond—Golden Rod	11.10	@	—
Book—			
No. 1 M. F.	7.10	@	7.35
No. 2 M. F.	6.85	@	7.20
No. 3 M. F.	5.60	@	6.20
No. 1 S. C.	7.60	@	7.85
No. 2 S. C.	7.10	@	7.35
No. 3 S. C.	6.10	@	6.35
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	11.00	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted.....	13.50	@	—
Wrapping—delivered—			
Rag Brown.....	4.85	@	5.55
White Wrap.....	4.00	@	—
"B" Manila.....	4.90	@	6.25
No. 1 Manila.....	5.50	@	7.00
Fiber	5.50	@	—
Kraft, No. 2.....	5.50	@	—

(F. o. b. Cars, Toronto)

News per ton—			
Rolls (contract)..$46.00		@	—
Sheets 54.00		@	—

Pulp

Ground wood.....29.50		@	—
Unbleached Sulphite.54.00		@	—
Book (Class 1).....64.00		@	—
Writing (Class 2)...62.00		@	—
Select (Class 3).....63.00		@	—
Kraft 50.00		@	—
Soda 56.00		@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut...	2.50	@	—
Soft White.....	2.15	@	—
White Blk. News..	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.00	@	—
Light and Crumpled Book Stock.	.85	@	—
Ledgers and Writings	1.20	@	—
Manilas—			
New Manila Cut...	1.35	@	—
Printed Manilas...	.55	@	—
Kraft	1.00	@	1.50
News and Scrap—			
Strictly Overissue.	.65	@	—
Strictly Folded....	.60	@	—
No. 1 Mixed Paper..	.50	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06¾	@	.07
Fancy Shirt Cuttings	.02½	@	.03¼